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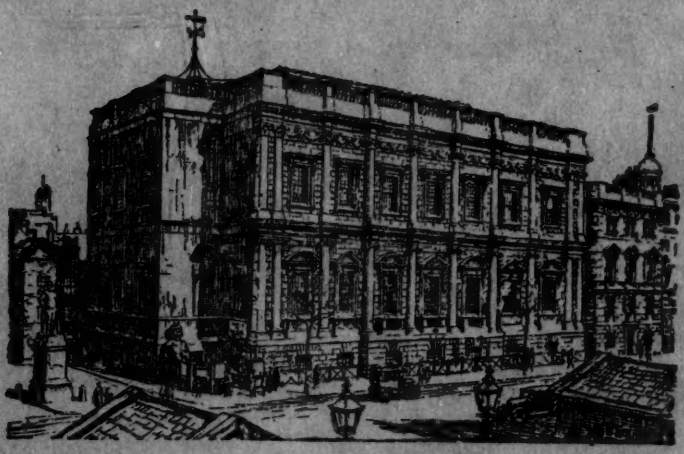

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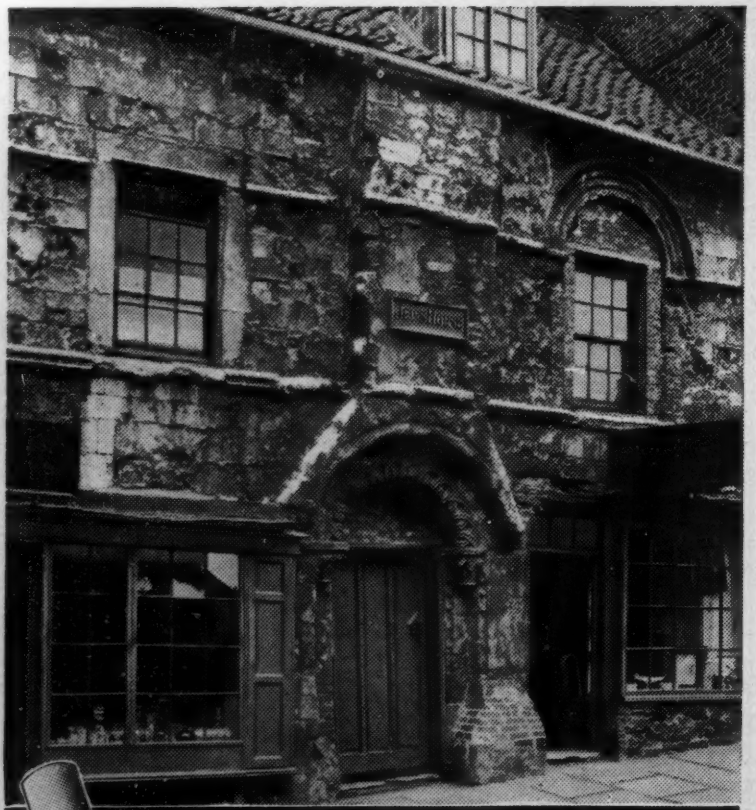

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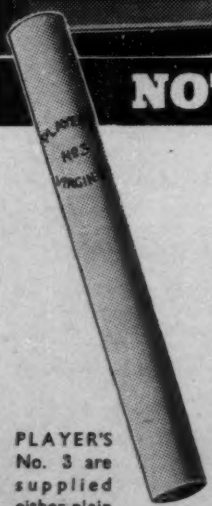

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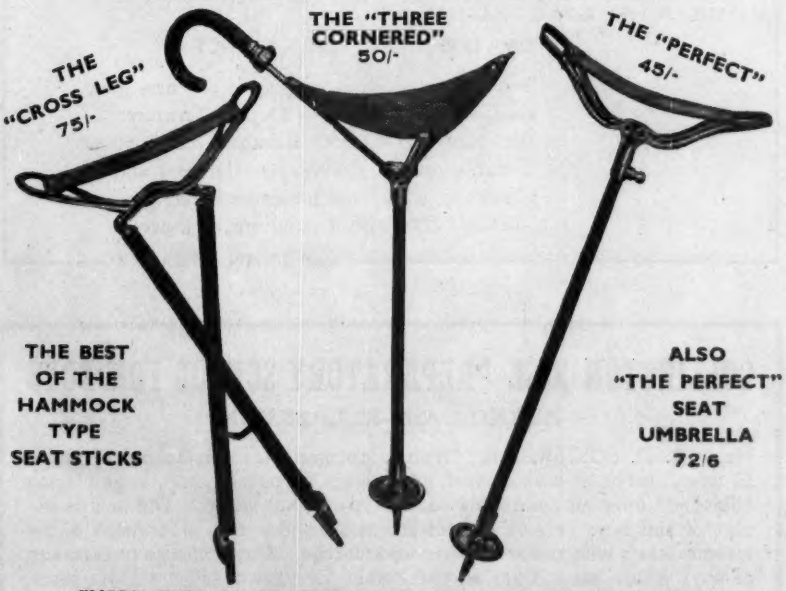
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THE INSTITUTION

The Royal United Service Institution is situated just below the War Office in Whitehall. It has the best professional Library in the United Kingdom; a Lecture Theatre, where an autumn and winter session of lectures is devoted to subjects of current or historical Service interest. The Reading and Smoking Rooms are provided with the leading papers, periodicals and writing materials.

The Institution is open daily from 10 a.m. to 7 p.m., except Sunday, Christmas Day and Good Friday.

THE JOURNAL

The R.U.S.I. JOURNAL is published quarterly and sent post free to Members in any part of the world. Copies may be purchased by non-members, price 7s. 6d.

THE MUSEUM

Situated in the Banqueting Hall of the old Palace of Whitehall (1622), with its magnificent Rubens ceiling, the R.U.S. Museum is a treasure house of relics and mementoes of great victories and renowned warriors. There is also a most valuable collection of Uniforms, Medals, Ship, Tank, and Aircraft Models, and models of the battles of Trafalgar and Waterloo.

For Members and their friends, there are private entrances to the Museum from the Institution.

H.M. Forces in uniform are admitted free at the public entrance.

Admission to the general public is 1s.; Wednesday and Saturday after Noon, 6d.

SECRETARY'S NOTES

February, 1938.

Anniversary Meeting

The Anniversary Meeting will be held at 3.30 p.m. on Tuesday, 8th March, 1938.

The Council will present their Annual Report and Accounts, and there will be an election to fill the vacancies on the Council.

The Gold Medal and Trench Gascoigne Prizes will be presented.

Copies of the Annual Report and Accounts can be obtained on application to the Secretary.

Vice-President

Admiral Sir R. G. O. Tupper, G.B.E., K.C.B., C.V.O., has been re-elected a Vice-President for a further period of office.

Council

Vice-Admiral Sir W. F. French, K.C.B., C.M.G., has been elected a naval member of the Council to fill the vacancy caused by the resignation of Admiral of the Fleet the Earl of Cork and Orrery, G.C.B., G.C.V.O.

Colonel J. K. Dunlop, O.B.E., M.C., T.D., was elected a Territorial Army member *vice* Colonel the Viscount Cobham, C.B., T.D.

Ex-Officio Members

General the Viscount Gort, V.C., K.C.B., C.B.E., D.S.O., M.V.O., M.C., has succeeded Field Marshal Sir Cyril J. Deverell, G.C.B., K.B.E., on taking up the appointment of Chief of the Imperial General Staff.

Major-General B. C. T. Paget, D.S.O., M.C., has become an ex-officio member of the Council on taking up the appointment of Commandant of the Staff College, Camberley.

Retiring Members

The following Members of the Council having completed three years service retire at the forthcoming Anniversary Meeting :—

ROYAL MARINES

Lieutenant-General W. W. Godfrey, C.B., C.M.G., R.M.

ROYAL NAVAL VOLUNTEER RESERVE

Commodore the Earl Howe, C.B.E., V.D., R.N.V.R.

REGULAR ARMY

Colonel G. E. C. Rasch, C.V.O., D.S.O.
General Sir Robert Whigham, G.C.B., K.C.M.G., D.S.O.

MILITIA

Brigadier-General S. E. Massy-Lloyd, C.B.E.

TERRITORIAL ARMY

Colonel F. D. Samuel, D.S.O., T.D.
Colonel B. Abel Smith, D.S.O., M.C., T.D., A.D.C.

New Members

The following officers joined the Institution during the months of November, December and January :—

ROYAL NAVY

Lieutenant A. C. C. Miers, R.N.
Lieutenant M. G. Greig, R.N.
Lieutenant R. C. Beckwith, R.N.
Vice-Admiral F. W. Caulfield, C.B.E.
Captain I. G. Glennie, R.N.
Commander R. I. Money, R.N.
Paymaster-Lieutenant J. Ellerton, R.N.
Lieutenant P. W. W. Graham, R.N.
Lieutenant D. P. Dreyer, R.N.
Captain D. B. Nicol, R.N.
Commander John Cameron, R.I.N.
Lieutenant J. S. Miller, R.N.

ARMY

Colonel D. E. Brand, D.S.O., T.D., late 5th Battn. The Highland Light Infantry.
Lieutenant M. T. G. Wood, Royal Artillery.
Lieut.-Colonel J. J. O'Hea, T.F. General Reserve.
2nd Lieutenant T. V. H. Beamish, Fifth Fusiliers.
Lieut.-Colonel A. Vickers, I.A. (retired).
Captain G. E. Thornton, The Royal Sussex Regiment.
Captain V. A. H. D. Denne, The Gordon Highlanders.
Colonel W. G. H. Vickers, O.B.E., I.A.
Brigadier F. E. Spencer, D.S.O., M.C., late R.A.
Lieutenant C. de B. de Lisle, 11th Hussars.
Captain J. B. P. Phillips, The Queen's Royal Regiment.
Lieutenant W. D. H. Duke, The Gordon Highlanders.
Lieutenant W. P. M. Allen, The Middlesex Regiment.
Lieutenant J. M. K. Bradford, The Dorsetshire Regiment.
Captain J. A. Davies, A.M.I.E.E., A.M.I.Mech.E., Royal Engineers.
2nd Lieutenant R. Gordon Finlayson, Royal Artillery.
Major J. T. Gorman, late The Connaught Rangers.
Major S. C. Guillan, The Queen's Royal Regiment (T.A.).
2nd Lieutenant A. C. V. Hart, The King's Own Yorkshire Light Infantry.

Captain J. W. Hay, 3/9th Jat Regiment, I.A.
2nd Lieutenant A. G. Hewitt, The Middlesex Regiment.
Captain G. A. Hill-Walker, The Northamptonshire Regiment.
Captain V. C. Knollys, The Rifle Brigade (R. of O.).
Major N. MacRoberts, D.S.O., M.C., late The Royal Fusiliers.
Cadet-Lieutenant E. G. Mandeville Roe, 6th Cadet Battn., The Essex Regiment.
Captain C. F. A. Nix, 4th Battn., The Royal Sussex Regiment, T.A.
Lieutenant F. A. Partridge, 22nd London Regiment, "The Queen's" (Reserve).
Lieutenant H. J. Power, 4th Battn., 14th Punjab Regiment, I.A.
Lieutenant H. C. Pulley, 1/3rd Q.A.O. Gurkha Rifles, I.A.
Captain R. St. G. T. Ransome, The Royal Fusiliers.
Captain J. B. Ready, The Royal Berkshire Regiment.
Major G. W. Richards, M.C., Royal Tank Corps.
Major-General H. G. Riley, R.A.P.C.
Major L. E. M. Savill, O.T.C.
Lieut.-Colonel G. J. S. Scovell, C.B.E., late The Cameron Highlanders.
Lieut.-Colonel R. L. Sherbrooke, D.S.O., The Sherwood Foresters.
Captain W. J. Shoolbred, Hodson's Horse, I.A.
2nd Lieutenant P. F. Smyth, Princess Louise's Kensington Regiment.
Captain C. A. Street, The South Staffordshire Regiment.
Captain D. A. Taylor, Mauritius Territorial Force.
Captain H. T. Thompson, The Border Regiment.
Major W. W. Wagstaff, late The Bedfordshire and Hertfordshire Regiment.
2nd Lieutenant P. D. R. Williams-Hunt, The Royal Fusiliers (S.R.).
2nd Lieutenant G. F. Woolnough, The Wiltshire Regiment.
Lieutenant G. K. Gowers, 1st Battn. 4th Bombay Grenadiers, I.A.
2nd Lieutenant J. L. L. Hillard, 1/4th P.W.O. Gurkha Rifles, I.A.
Captain R. M. Lowe, The Royal Warwickshire Regiment.
Captain W. P. Oliver, The Queen's Own Royal West Kent Regiment.
Lieutenant C. M. Townsend, The Durham Light Infantry.
Captain C. D. Barlow, The King's Shropshire Light Infantry.
Gentleman-Cadet J. D. Goddard, Royal Military Academy, Woolwich.
Captain T. G. Gribble, late The Lancashire Fusiliers.
Captain J. T. Milner, The Worcestershire Regiment.
Major R. Briggs, Royal Tank Corps.
Colonel Sir Rhys H. Price, K.B.E., C.M.G., V.D., late South African Defence Forces.
2nd Lieutenant L. H. Edwards, Royal Artillery.
Captain S. J. Lovegrove, Royal Signals, T.A.
Lieutenant R. de Z. Manser, The Suffolk Regiment.
2nd Lieutenant J. Wallace, Royal Artillery.
Lieutenant E. J. H. Bates, Royal Artillery.
Brigadier A. W. Purser, O.B.E., M.C., Royal Artillery.
Lieutenant W. F. Wentworth-Shields, Territorial Army Reserve of Officers.
Lieutenant F. W. B. M. Byrne, The Royal Irish Fusiliers.
2nd Lieutenant R. I Mitchell, B.Sc., Glasgow University O.T.C.
Colonel P. A. V. Stewart, C.B.E., D.S.O. (retired).
Captain F. D. Richardson, The Rifle Brigade.
Lieut.-Colonel Hilton Vickers, I.A. (retired).

Lieutenant P. C. Steel, The King's Shropshire Light Infantry.
Captain G. H. B. Beyts, M.C., 3/6th Rajputana Rifles, I.A.
Lieutenant K. R. McK. Biggs, The Middlesex Regiment (S.R.O.).
Captain W. A. Grey, The King's Shropshire Light Infantry.
Colonel Harry Willans, D.S.O., M.C., T.D., The Artists' Rifles.
Major R. L Bennett, The Rangers, K.R.R.C.
Major M. Lea-Cox, Royal Artillery.
Lieutenant J. K. Arthur, The Northamptonshire Regiment.
Major G. D. Baines, The Poona Horse, I.A.
Colonel H. I. E. Palmer, C.M.G., I.A. (retired).
2nd Lieutenant G. R. Buchanan, R. A. (T. A.)

ROYAL AIR FORCE

Flight-Lieutenant F. C. Cole, R.A.F.
Flight-Lieutenant W. P. G. Pretty, R.A.F.
Squadron-Leader J R. Mutch, R.A.F.
Flight-Lieutenant H. R. Dale, R.A.F.
Flying Officer J. R. Gordon Finlayson, R.A.F.
Squadron-Leader C. McK. Grierson, R.A.F.
Wing-Commander H. E. Tansley, M.C., R.A.F.
Flight-Lieutenant D. Stephenson, R.A.F.
Act. Pilot-Officer J. R. C. Young, R.A.F.O.
Air Commodore P. F. M. Fellowes, D.S.O., late R.N. and R.A.F.

Suspension of Entrance Fee

As a temporary measure, and especially to enable as large a number of officers as possible to avail themselves of the facilities offered by the Institution during the period while His Majesty's Forces are being increased, the Entrance Fee has been suspended.

Officers of all ranks whose names appear on the current Official Lists can, therefore, join the Institution by paying the Annual Subscription of £1 5s. only. Membership will date from the 1st January.

Gold Medal Essay (Air), 1938

The following subject has been selected :—

" Discuss the influence which modern air forces may exert on British strategy in a major European War in which Great Britain is involved ; and suggest what higher control organization is desirable in order to co-ordinate the operations of the three Services."

Gold Medal Essay (Naval), 1937

The following Essays have been received :—

" And if she maintains her navy in full strength . . ."
" Fidus et Audax."
" The Victory fell on us . . ."
" Eternal Vigilance is the price of Liberty."
" The Commitments we have to defend . . ."
" Sauve qui peut."
" The Royal Navy, 1938."
" Denke viel, sprich wenig . . ."

LIBRARY

Facilities for Borrowing Books

The special attention of Members who are paying the comprehensive annual subscription of £1 5s. od., is invited to the fact that they are thereby entitled to the full privileges of the Lending Library without further charge. These include the right to have sent to them not more than four volumes at a time on loan, the Member paying postage both ways.

Old Members who have not wished to conform to the new arrangement and who are still paying the original subscription of £1 1s. od., must pay an additional subscription of 10s. per annum in order to belong to the Lending Library.

All Members are, of course, free to use the Library when they visit the Institution.

Rules Governing Return of Books

The attention of Members is invited to the following Regulations governing the retention and return of books :—

(1) Certain books, for which there is a special demand, must not be retained longer than a fortnight after the date of receipt. A notice to this effect will be found in the book.

(2) In the United Kingdom.—Books must normally be returned within one month of the date of issue ; but the Librarian is authorized to make extensions of one month at a time on application by a Member, up to a maximum of three months from the date of issue, if the work is not required by another Member.

(3) Stations Abroad.—When books are sent to Members abroad the same rules apply as for the United Kingdom, except that " the date of receipt " is substituted for " the date of issue."

N.B.—IN VIEW OF THE INCREASING DEMAND FOR BOOKS FROM THE LENDING LIBRARY, IT IS ESSENTIAL IN THEIR OWN INTERESTS THAT MEMBERS SHOULD ADHERE STRICTLY TO THE RULES GOVERNING THE RETURN OF BOOKS. FAILURE TO DO SO IS CAUSING MUCH INCONVENIENCE AND INVOLVING THE INSTITUTION IN UNNECESSARY EXPENSE AND CLERICAL LABOUR.

JOURNAL

Date of Publication

In future the JOURNAL will be published on the 25th April, July, October, and January.

Members should notify any Change of Address not later than the 10th of the month in which the JOURNAL is due to appear.

Notes for Guidance of Contributors

The Editor has been asked to publish some notes for the guidance of those who desire to offer contributions to the JOURNAL. The following are the principal points to which attention is invited :—

(1) Preference will be given to articles which assist in the " promotion and advancement of naval and military science and literature " in practical form, and which are written with an up-to-date and first-hand knowledge of the subject with which they deal. Articles relating to the Royal Air Force and to Service aviation are included under this heading.

(2) Historical articles should point some definite lesson for the present or future and not merely recapitulate accounts of episodes of the past.

(3) Articles of interest to students of war in all three Services are preferable to those of a highly technical nature or of such restricted interest that they could only appeal to a very limited number of our readers.

(4) As a general rule, articles should not exceed 3,000 words in length. Apart from considerations of space, experience shows that the short article which makes its points concisely is more effective and more widely read than one of a long and rambling character.

(5) Contributions intended for the JOURNAL should be addressed to the Editor. They should be typed (double spacing), but short articles in legible manuscript can be accepted if a typewriter is not available.

(6) The Editor is authorized to obtain official sanction for the publication of articles written by serving officers; it must be clearly understood that nothing written by such officers can be accepted for the JOURNAL without this sanction being obtained. Army officers should obtain permission for articles to be submitted for publication from their C.O.s.

(7) Except where contributors are good enough to offer articles without remuneration, this will be paid at the authorized rates.

(8) Attention is invited to the note on the first page of each JOURNAL regarding authors alone being responsible for their opinions; also to the notice at the head of "Correspondence."

Orders for Supply

Subscribers are recommended to place orders for supply of the JOURNAL direct with the Royal United Service Institution, thereby obviating delay in delivery. A suitable order form can be provided on request.

MUSEUM

Special Exhibitions

A Special Exhibition, now on view and being retained until after the Easter holidays, depicts in scale models, sectional models, photographs and a large map, "The Development of Imperial Air Communications."

Another small Exhibition, which will be showing for the same period, represents "Air Raid Precautions," and includes the various types of official gas masks and other precautions; also photographs and relics of air raids on the London district during the Great War.

Additions

(8964) Head-dress, sword and pouch, King's Dragoon Guards.—Presented by Mrs. F. T. V. Dunne.

(8965) New Zealand Medal (1863–64) and Naval Sword (1850).—Presented by Major F. T. V. Dunne.

(8966) Four coloured prints of military subjects.—Presented by Miss I. A. Rosser.

(8967) Sword of the Regiment de Mortemart (1794).—Presented by Lieut.-Colonel W. E. Moss.

(8968-69) Medals and Orders of the late Admiral of the Fleet Sir Charles Madden.—Presented by Lady Madden.

(8970) Water-colour sketches of H.M.S. "Agamemnon" (1781) and H.M.S. "Racoon" (1803).—Presented by Mrs. Slagg.

(8971) Full-dress head-dress of the late Wing Commander W. R. D. Acland.—Bequeathed by Wing Commander W. R. D. Acland.

(8972) German streamer for dropping messages from aircraft; German device for protecting rifle barrels.—Presented by P. Hicks.

(8973) Autograph letter from General Sir Thomas Picton.—Presented by Brigadier H. R. S. Massy.

(8974) Slug fired from a field piece made by tribesmen in Waziristan, and used against British troops.—Presented by Captain H. J. Cooper.

(8975) Scale model of an Armstrong-Whitworth "Whitley" Bomber.—Presented by Sir W. G. Armstrong Whitworth & Co.

(8976) Model of a Gloster "Gladiator" Fighter aircraft.—Presented by the Gloster Aircraft Co.

(8977) Model of a Handley Page "Harrow" bomber.—Presented by Messrs. Handley Page Ltd.

Pictures for Disposal

The Institution has duplicate copies of the following coloured lithographs by Hull for disposal. They are in fair condition and each is framed. Prices on application to the Secretary :—

1st Life Guards—A Private, 1829.
1st Life Guards—Riding Master and Rough Riders, 1829.
1st Regt. Life Guards—A Farrier, 1928.
Royal Horse Guards, Blue—Officer in Undress, 1828.
Royal Horse Guards, Blue—Private and Corporal, 1828.
10th Royal Hussars—Private, Winter Dress, 1830.
10th Royal Hussars—Trumpeter, 1829.
11th Regt., Light Dragoons—Stable Dress, 1829.
15th Hussars—A Private, 1828.
Royal Artillery—A Private, 1828.
3rd Foot Guards—Bugleman, 1828.
23rd Regiment Royal Welsh Fusiliers, 1829.
62nd Regiment—Officer of Light Infantry, 1828.
87th or Royal Irish Fusiliers—An Officer, 1828.
87th Regt. or Royal Irish Fusiliers—A Private, 1828.
87th Regt. or Royal Irish Fusiliers—Drum Major, 1828.
Royal Wagon Train—Field Officer, 1828.
Field Officer of the Honble East Indian Company—Depot at Chatham, 1830.

Attendance

The amount taken for admission for the last quarter was :—

£134 12s. 6d. in November.
£85 10s. 0d. in December.
£100 4s. 0d. in January.

By courtesy of the Imperial War Museum

TWENTY YEARS AGO

THE DAWN PATROL

From the painting by G. H. Davis

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[Authors alone are responsible for the contents of their respective Papers. All communications, except those for perusal by the Editor only, should be addressed to the Secretary, Royal United Service Institution.]

THE BIRTH OF THE ROYAL AIR FORCE

By H. A. JONES, M.C.

IT is now generally forgotten that the Royal Flying Corps was set up in May, 1912, as a national and not merely a military air service; as such it might, therefore, claim to be the true parent of both the Royal Air Force and of civil aviation. The powerful Sub-Committee of the Committee of Imperial Defence under the chairmanship of Lord Haldane whose report of February, 1912—a document of 247 printed pages—led to the formation of the service, opened their recommendations with the words:

> "The British aeronautical service should be regarded as one, and should be designated 'The Flying Corps.' The Flying Corps should supply the necessary personnel for a Naval and Military Wing, to be maintained at the expense of, and to be administered by, the Admiralty and the War Office respectively. The Corps should also provide the necessary personnel for a Central Flying School, and a reserve on as large a scale as may be found possible."

A study of the report reveals that the majority of the members of the Sub-Committee endorsed the views of Mr. Winston Churchill, who stated that "the principal part of the art of aviation was neither naval nor military."

The Flying Corps was also to maintain its own technical establishment. "The mechanical requirements of the Flying Corps," said the report, "should be provided by the existing Army Aircraft Factory, to be renamed the Aircraft Factory.[1] This establishment should undertake the following important duties: the higher training of mechanics for the Flying Corps and for the Central Flying School; tests with British and foreign aeroplanes of the latest design; and experimental work."

[1] Now the Royal Aircraft Establishment, Farnborough.

It will thus be seen that there were to be common training and technical organizations, and that a reserve, to be employed to reinforce the operations of the Navy or the Army, according to the nature of a possible war, was to be created. To ensure close co-operation between the activities of the two Wings a joint Air Committee was formed under the chairmanship of Colonel J. E. B. Seely, the Secretary of State for War.

Such were the hopes and intentions. However, in the diplomatic words of a later War Cabinet report, " the forces working in the direction of dualism proved stronger than any unifying influence which the Joint Air Committee was able to exert." Among the forces making for dualism I would attach particular importance to the fact that there was no possibility in the short time available before the onset of war of the creation of a reserve, except on paper. It was, as explained below, the expected existence of a superfluity of aircraft—the Surplus Aircraft Fleet as it was called—and what was to be done with them, that influenced the decision to form the Royal Air Force. There were of course other features favouring division, such as an absence of special ranks, and the fact that the officers in the Flying Corps had still to look to the Navy or the Army for their careers. But even if the various deficiencies, if such they were, had been remedied, it cannot be said with any conviction that there would have been a smooth and unstimulated coalescence of the naval and military air services: it is probably true to say that more than one bite at the cherry was essential for digestion.

War Difficulties.

When war came in 1914 the members of the co-ordinating committee —the joint Air Committee—had their time filled with their departmental and other duties, and they never met again. That is to say, the committee quietly died at the moment when it should have entered into a full and throbbing life. From the beginning the naval and military wings were inevitably in competition for personnel and supplies, and as the War progressed with its insatiable demands on the man-power and industrial resources of the country, it became clear that the rough-and-ready methods of allocating between the two Services our own aeronautical capacity and such material as could be obtained from our Allies, were wholly unsatisfactory.

As a way of finding solutions to the many air problems which awaited attention at the beginning of 1916, a new Joint War Air Committee was set up in February under the chairmanship of Lord Derby. The members were charged with the duty of preventing competition between the two Services and of increasing the output of aircraft by co-ordinating

design and the placing of orders. It was to be a permanent body, but it proved to be as fleeting as the ghost in " Hamlet," although, like that troubled spectre, it helped to stimulate action. After a few weeks Lord Derby resigned, saying that nothing short of amalgamation would bring the two Services closer together.

Lord Curzon, the Lord President of the Council, submitted a memorandum to the War Committee in April, 1916, in which, after reviewing the causes of the failure of the Derby Committee, he suggested the formation of an Air Board with increased powers as a preliminary to the creation of an Air Ministry, a subject about which the Board itself would report in due course. The Air Board was formed, but although it had more powers than its predecessor they lay almost wholly in the fields of suggestion, and the wider area of ' meddle ' meant, in effect, enlarged opportunities for friction. Lord Curzon, the first President of the Air Board, soon found himself in verbal conflict with some of his ministerial colleagues. In the words of Mr. Lloyd George :

> " Lord Curzon . . . . was in turn challenged by Mr. Balfour in a very caustic and amusing memorandum. To this Lord Curzon replied in suitable terms. It was clear that if the controversy did not conduce to the provision of aeroplanes it at least provided excellent entertainment for those who were privileged to read these documents and to hear the discussions . . . the aeroplane case was always first in the list after the usual preliminary reports from the Army and the Navy . . . When in despair of conciliating the antagonistic proposals, the Prime Minister had a habit of turning round to the mantelpiece to see whether any temporary relief from his perplexities was indicated by the position of the hands on the clock. We all knew what that meant. He was making for a postponement of further discussion to the next meeting. . . ." [1]

In the Spring of 1916, as a result of the public disquiet that all was not well with the air services, a Committee of Inquiry had been set up under Mr. Justice Bailhache. The committee issued an interim report in August, 1916, and a final one in November, their main recommendation being that there should be one Department charged with the equipment of both the flying services. At the time when the final report appeared Sir Douglas Haig, prompted by Major-General Trenchard, who foresaw a great increase in air fighting in 1917, told the War Office that he would require an additional twenty fighting squadrons for the Western front. There was no chance of meeting this demand from the supply sources available to the Royal Flying Corps. The whole question

[1] Memoirs, Volume II, pp. 977–8.

of output would have to be explored with the Admiralty, War Office, and Ministry of Munitions with a view to adapting the existing and potential supplies of labour, machine tools, and raw material to the imperative needs of the two Services. On the 7th December, 1916, there was a change of Government, when Mr. Lloyd George succeeded Mr. Asquith as Prime Minister, and Lord Curzon at once brought the whole question of air organization before the new Cabinet. On the 22nd December the powers of the Board were widened under a new President, Lord Cowdray.

The second, or Cowdray Air Board, was made definitely responsible for the design of aeroplanes and seaplanes, for the numbers to be ordered, and for their allocation to the two air services. The Ministry of Munitions was made responsible for production, inspection, and for handing over the aircraft to the two Services in accordance with the allotments made by the Air Board.

So far so good. The Board, however, had one vital weakness. It was free to discuss matters of air policy and to make recommendations to the Admiralty and the War Office. Decisions about types and numbers of aircraft to be ordered, however, and their allocation, could only flow naturally from decisions of policy. In other words, the Board had no effective say in the very decisions which conditioned its short and long term activities. This weakness was often apparent, particularly so after the beginning of the German aeroplane daylight bombing campaign. In May, 1917, the German No. 3 Bombing Squadron opened the attacks with a severe raid on Folkestone, and on the 13th June made the first of the two big attacks on London, when the casualties exceeded those suffered in the County of London area as a result of all the airship attacks made up to that time. The immediate result of this raid was that the Cabinet decided to double the air services. Then, on the 7th July, came the second attack, in the light of which the Government set up a Committee, composed of Mr. Lloyd George, the Prime Minister, and Lieutenant-General J. C. Smuts, to report upon the defence arrangements against air raids, and on the air organization generally.

Within a few days of the second raid on the capital Lord Cowdray told the members of the Air Board that the popular outcry about the air policy of the Government would become acute, and that the Air Board would be impotent so far as concerned policy until it was given a special air staff. It was left that the members would think the matter over, but the discussion revealed wide and strongly held differences of view about the Air Board having any say in matters of policy at all.

So much for the general background. In the foreground was an

optimistic estimate of impending aircraft production. Lord Cowdray, looking ahead, could see a considerable surplus of aircraft left over after the needs of the Navy and Army had been met. He took the view that the policy which should direct the operations of this Surplus Aircraft Fleet could be laid down only by an Air Board disposing of a war air staff.[1] He submitted a long and considered memorandum, on these lines, to General Smuts on the 28th July. Meanwhile General Smuts had listened patiently to many experts and he quietly examined all the evidence bearing on the problems of air power. He presented his first report, dealing with home air defence, on the 19th July, and his second, on the general air organization, on the 17th August. The second report, a masterly document on which the decision to create a separate air service was taken by the Government, is printed in full in the *Official Air History*,[2] and is worthy of a close study by every military student. General Smuts pointed out that the time was approaching when aircraft would be used for independent operations, and that " as far as can at present be foreseen there is absolutely no limit to the scale of its future independent war use. And the day may not be far off when aerial operations, with their devastation of enemy lands and destruction of industrial and populous centres on a vast scale may become the principal operations of war. . . . Man-power in its war use will more and more tend to become subsidiary and auxiliary to the full development and use of mechanical power . . . we must create the new directing organization, the new Ministry and Air Staff which could properly handle this instrument of offence, and equip it with the best brains at our disposal. . . ."

Accepting the recommendations of General Smuts, in principle, the Government set up an Air Organization Committee to work out the scheme in detail. This body, again under General Smuts, was composed of representatives of the Admiralty, War Office, Treasury, and Air Board. It plotted the whole of the ground, and one result of its labours was a Bill—the Air Force (Constitution) Act, 1917—which was presented to Parliament and duly received Royal Assent on the 29th November, 1917. The first Air Council was formed on the 3rd January, 1918, with Lord Rothermere as Secretary of State, and the Royal Air Force itself on the 1st April, 1918.

It has been seen that many minds, approaching the problems of air power at different times and from varying angles, reached firm conclusions about the need for an independent third Service. Any judicial

[1] Owing mainly to production and supply disappointments the surplus had not materialized by the end of the War.

[2] *The War in the Air*, Volume VI, Appendix II.

attempt, therefore, to appraise the value of the contribution towards the creation of the Royal Air Force made by individuals would include a good sprinkling of names. No such attempt will here be made, but three people may be mentioned who would appear on the shortest possible list. In the first place, General Smuts deserves the gratitude of the Service for his vision and for the brilliant gifts which were employed in full array to implement that vision. He stood in detachment from British political and Service affairs, and this aloofness reinforcing his natural abilities charged his judgments with a rare power. At his side must stand Lieutenant-General Sir David Henderson, some time Director-General of Military Aeronautics at the War Office. This officer had been a member of the small informal committee which had cleared most of the ground for the formation of the Royal Flying Corps in 1912, and subsequently, as the air member of the Army Council, he had steered the Corps through the difficult war years. He was the most hard-working of the members of the Air Organization Committee on whose labours the foundations of the Royal Air Force were laid, and there is little doubt that his work against time on this committee, given with an inspired prodigality, used up all his reserves of physical strength : it was his last big service to the Royal Air Force and his most outstanding. Finally, with regard to the cementing and up-building of the Force in the years subsequent to its creation, tribute must be paid to the work and indomitable character of Lord Trenchard.

The Royal Air Force

An uncounted number of guns were fired on the day the Force was born. We may best obtain an idea of the responsibilities which it took over with its constituent services and the nature of the subsequent work of the Force if we take a look at the battle fronts and note some of the happenings in the air on the 1st April, 1918. The whole war panorama was sombre and tense. On the Western Front the great German offensive which had begun on the 21st March was being relentlessly prosecuted in front of Amiens. From the opening of the battle the squadrons had had a gruelling time. Aerodromes had been overrun or had been made untenable by shell fire. Many squadrons had had to pack up and go on the move at little or no notice while doing their utmost to impede the German advance. On the 25th March Major-General J. M. Salmond, to help stop the threatened enemy breakthrough on the Third Army front, had thrown all his available bombers and fighters into the battle, ending his order with the words : " Very low flying is essential. All risks to be taken. Urgent." It was in the

urgent spirit of this ' all risks ' order that the Royal Air Force, as such, began operations.

When darkness set in on the 31st March the sky was overcast and there were rain squalls. As the night wore on, however, the clouds dispersed, and the bombers who journeyed to and from enemy targets during the whole night were helped by the light of the moon. Air observers on the evening of the 31st had brought back news of large troop concentrations on the Amiens–Roye and Amiens–St. Quentin roads, and the two-seater F.E.2.B's of No. 101 Squadron bombed targets on these roads and billeting villages along them at intervals in the night. Each pilot carried two bombs of 112 lb. weight, or eight 25-pdrs., and the squadron dropped no fewer than seventy-eight of the former weight and a hundred and fifty of the latter, firing off, in addition, many thousands of rounds of machine-gun ammunition when the bombs had been expended. The raids stung the German air service into retaliation, and just as the last of the squadron bombers was landing in the early morning of the 1st April, the aerodrome was attacked, the bombs killing three and wounding two of the squadron personnel, and wrecking four aeroplanes.

No. 102 Squadron dropped four hundred bombs during the night on similar road and village targets, while six other squadrons, including four whose day-time task was Army co-operation, attacked train movements and railway centres, the total for the night being twenty-three tons.

The first day of April was fine and the visibility good. There was a British counter-attack near Moreuil, in which S.E.5.A's of No. 84 squadron flew low to take part. One of the German regiments in the battle—the 114th—records in its regimental history: " Shortly after 9 a.m. heavy artillery fire starts. Numerous airmen attack with machine gun and bombs and cause our line considerable loss. . . ." Six other Royal Air Force fighter squadrons made low-flying bomb and machine-gun attacks during the day. There were about fifty reconnaissance flights, fifty-two enemy batteries were engaged for destruction and fifteen for neutralization with the help of air observers, there were some encounters South of the Somme with large enemy air formations, two balloons were shot down, and the bombs dropped totalled seventeen tons in weight. At the end of the day ten Royal Air Force aeroplanes were missing, and thirty-eight were wrecked, four as a result of the bombing of No. 101 squadron's aerodrome, already referred to, twelve through enemy fire, and the remainder because of forced landings due to engine failure or because of faulty landings resulting in part from the high nervous strain suffered by pilots in the battle and in part also to the unsuitability of the fields used as temporary landing grounds.

On the sea flank of the Western front the air squadrons working with the Dover Patrol operated over the Belgian coast and along the approaches to the Channel. D.H.4 two-seaters of No. 217 Squadron bombed destroyers North-East of Ostend, scoring a hit on one of them, and three Sopwith "Camels" of No. 213 Squadron had a notable encounter with surface craft and aircraft. The three "Camel" pilots were flying North-West of Zeebrugge when they came upon enemy destroyers, with one two-seater and two single-seater seaplanes flying above them at about 1,000 feet. The Royal Air Force pilots skilfully attacked, and all three seaplanes crashed into the water, one of them in flames; the German records confirm the loss of four members of the Zeebrugge seaplane unit on this day. In general, at this time, the main work of the squadrons engaged in assisting naval operations was anti-submarine patrol, the total number of air patrols in the whole month of April being 2,301, during which an aggregate of 327,000 miles were flown.

In Palestine the military force which had set out to attack Amman was mainly back again across the Jordan on the morning of the 1st April, after the first failure which the British forces in Palestine had suffered since second Gaza a year before. The weather in the valley of the Jordan was wild, with tearing clouds and high winds, but the squadrons were not deterred from making bombing operations. There were violent storms, also, in Mesopotamia which wrecked aeroplanes and hangars of No. 63 Squadron at Samarrah, tore a balloon from its pickets and struggling balloon party, wrecked the camp and an aeroplane of No. 30 Squadron at Hit, and otherwise played general havoc. On the Italian front, stabilized after the disaster at Caporetto, there were indications in the air reports of enemy concentrations, although no definite signs of an impending offensive. In Macedonia, where also the Allies were on the defensive, the air squadrons alone were pursuing an offensive. In general, in the outside theatres of war where the weather permitted—the wild weather of the 1st April was exceptional—the Royal Air Force celebrated its creation everywhere by adopting an offensive policy.

So much for the birthday of the Service. Truly the scene, no matter where one looks, was drab and brooding. Although, however, the day of Haig's desperate "Backs to the wall" order was yet to come, we can look back now and know that the darkness was already becoming less intense. So far as concerns the Royal Air Force, it may be truthfully said, with no disparagement of the German air service which made magnificent use of its inadequate resources, that the squadrons went forward on all fronts in 1918 to a high noon of achievement.

On the Western front the squadrons not only co-operated in the series of offensives by the British armies, but they also took a direct part in some of the battles staged by the French and by the Americans. There were daily reconnaissances, close and distant, to report upon the enemy dispositions, almost a routine of flights in co-operation with the fire of the artillery, photography of the German defensive areas, contact patrol flying low down over the infantry keeping a watch on their movements in battle, sweeps in the air which led to many conflicts, bitterly waged, with German fighter formations, and, above all, a relentless bombing and machine-gun offensive against ground targets—an offensive which had the cumulative and reinforcing effect of rhythmic hammer blows. Symbolic of the German discomfiture in the air was the withdrawal from the front of the famous Richthofen squadron. Under the leadership of Hauptmann Goering it had fought with almost reckless courage, but the losses which it suffered were described as terrible (*fürchterliche verluste*).

A notable contribution to the air offensive on the Western front, also, was made by the bomber squadrons of the VIII Brigade under Brigadier-General C. L. N. Newall (now Chief of the Air Staff), which, from June, 1918, onwards, formed the nucleus of Major-General Trenchard's Independent Force. The bombers hammered away at German industrial and other military objectives in the Rhineland area, and, apart from the damage inflicted, the attacks had a depressing influence on the morale of the workers and of the population generally. The effect on the output of war material was also important, not so much as a result of the actual attacks, but because of the many alarms.

In Palestine, in 1918, the Royal Air Force achieved a mastery in the air which, for practical purposes, was virtually complete. By September, when Allenby made his great offensive, "air reconnaissances of the British positions," wrote the German Commander, General Liman von Sanders, "had almost ceased." A main result was that the air co-operation in the battle was classic in its planning and in its effect. The chief enemy telephone exchanges were shattered by bombing, and the fog of war thereafter shrouded the German and Turkish commands and rendered them almost impotent in the battle. More important was the bombing of the Turkish retreating armies in the defiles, notably the Wadi el Far'a, where a hundred guns, nearly a thousand derelict transport vehicles, and dead animals and men were the physical toll of the most terrible piece of military bombing of the War. On the Macedonian front there was a similar, though less devastating, bombing of retreating Bulgars in the Kryesna and Kosturino passes. In Italy the Royal Air Force had helped the Italian air service to stem the

Austrian advance in June, 1918, notably by an effective bombing of the Piave bridges, and they helped again, mainly by bombing and low flying attacks, in the final offensive which broke the Austrian resistance.

Possibly the most notable event in the air war at sea in 1918—apart from the contribution made towards the defeat of the U-boat campaign—was the combined operation against the Tondern airship sheds on the 19th July as a result of which the Zeppelins " L.54 " and " L.60 " were bombed to destruction with their shed.

When the War ended the Royal Air Force was incomparably the strongest air force in the world. It included 27,333 officers, 263,842 men, 22,647 aircraft of all kinds and 103 airships; there were 274 aerodromes overseas and 401 in Britain; there were 185 service squadrons, 53 of them at home, and about 200 training squadrons. Ranged behind the Service was a great aircraft industry employing 347,000 persons, more than three times the number similarly employed in Germany.

THE TRAINING OF A ROYAL AIR FORCE PILOT

By Air Vice-Marshal L. A. Pattinson, D.S.O., M.C., D.F.C.

On Wednesday, 5th January, 1938.

Air Marshal Sir W. G. S. Mitchell, K.C.B., C.B.E., D.S.O., M.C., A.F.C., in the Chair.

The Chairman on introducing the lecturer said that Air Vice-Marshal Pattinson was commanding Headquarters No. 23 (Training) Group, Grantham, and was responsible for all the Royal Air Force flying training. He was, therefore, particularly well qualified to speak on the subject.

LECTURE.

THE subject of the lecture is the Training of a Royal Air Force Pilot, but I propose dealing with it somewhat narrowly by describing some of the points affecting the typical training of the bulk of the pilots of the regular Air Force. It is not my purpose to go into the details of specialized forms of training. The pilots to whose training reference will be made are those who go through the flying training schools. They are University graduates, who on entering the Royal Air Force get permanent commissions, but do not go through the Royal Air Force College; officers under training for Short Service Commissions entered directly from civil life; and airmen under training to be N.C.O. pilots.

In recent years, there have been a number of changes in our system of training pilots. There have been two special reasons for those changes: first there is the need for enabling our service squadrons to concentrate on actual unit training, as opposed to further training of the individuals coming to them; that has called for an amplification of the training at the flying training schools, so that pilots can go to their squadrons at a more advanced stage. Secondly, there is the demand for greater output of pilots owing to the scheme of Air Force expansion; this necessitated the creation of many more flying training schools, and greater intensification of training.

Before 1936 the responsibility of the flying training schools was confined to teaching pupils to fly service aircraft properly, and to navigate across country both under normal conditions and solely by instruments when shut in under a hood. The flying course was divided into two parts: the first term for elementary training on light type aircraft, and

the second term for advanced instruction in flying heavier service aircraft. The course, then as now, also covered a complete syllabus of ground training in service subjects, including armament, practical rigging of aircraft, the care of engines, administration and such other matters.

The New System

The first products of the new system of training passed into service in May 1936. Generally speaking, their more advanced syllabus provides for a higher standard of training in air navigation, night flying up to the point of flying service-type aircraft solo at night, and particularly weapon training in the air, with a month's range work at an armament training camp. It also includes air training in photography, reconnaissance and formation flying.

Now, this demand for increased training and for increased output of trainees would have involved a very great expansion in the number of flying training schools on the older basis and there would have been great difficulty in providing sufficient service instructors, and a great deal of expense and delay in creating the new schools. Apart from that consideration, it is undesirable to complicate the work on any particular aerodrome too much. Under the old system, there was already *ab initio* flying training on light training aircraft and advanced flying on heavier service aircraft ; to have added a third stage of training on various types of service aircraft would have tended to make for congestion and would have involved a still further complication in the use of a variety of aircraft at the same schools, with increased risk of collision. The solution of the difficulty was found in the employment of civil schools for the first stage of training, that is to say basic flying training on light aeroplanes and introductory ground instruction. The civil schools work on a commercial basis, under contract with the Air Ministry. Although subject to an exacting programme of work and therefore under strict discipline, their pupils do not wear uniform and they live in accordance with civilian routine. At the time when it was decided to bring in the civil schools to help out our training, a great many were already in existence. The number had to be increased and additional instructors were found largely from officers on the Royal Air Force Reserve. The control of instruction at the civil schools is the responsibility of the Superintendent of the Royal Air Force Reserve. He maintains a constant supervision of ground training by the civil schools and of their flying instruction, the latter being carried out through the medium of a staff of trained and experienced R.A.F. flying instructors.

The outcome of these changes is that there are now four stages in a pilot's training. They are as follows :—

(1) The elementary stage of learning to fly light aeroplanes, on a civilian basis at a civil school. During this stage a pilot learns how to handle an aircraft correctly, both normally with a view of the ground, and when flying purely by instruments. It finishes up with a certain amount of simple cross-country flying. The duration of the elementary stage is eight weeks in summer and ten weeks in winter.

(2) The pilot then goes to the Air Force Depot, and assuming that he is an entrant from civil life—which most of them are, the course at the R.A.F. Depot, which lasts only a fortnight, is his introduction to Service life. During the course he does drill, gets accustomed to routine and discipline, and obtains uniform and general kit.

(3) The pilot then goes on to the intermediate stage, which is at a R.A.F. Flying Training School. The purpose of this stage is, of course, to increase the pupil's flying ability, and to teach him to fly Service aircraft. The aim which we lay down is that at the end of the intermediate stage the pilot shall be able to fly as a natural habit. He should be brought to the point at which the use of the controls is more or less automatic and flying is a means to an end—a Service end, and not an end in itself.

The intermediate stage of training includes fairly long cross-country flights, advanced flying by instruments including navigation under a hood, and night flying up to the stage of doing solo night landings. At the end of the intermediate stage the pilot qualifies for the flying badge, which gives him authority to carry passengers. During that stage, the hard and fast syllabus of ground instruction is completed in the classroom and the pupil has to pass examinations. This term lasts thirteen weeks in the summer and fifteen weeks in winter, and it is followed by a two weeks' break.

(4) Finally, the pupil proceeds to the advanced stage at the Service Flying Training School. The advanced stage is arranged for air work for Service purposes and advanced training in flying. It is all applied flying. Examples of applied flying done in the advanced stage are armament training and further instruction and experience in air navigation, both solely by instruments under a hood and

partly by map reading and partly by instruments. The period includes one month's attachment to an armament training camp for range work in bombing and gunnery, the exercises being under the same conditions as apply to the various Service squadrons. This period is of the same duration as the intermediate stage, i.e., thirteen weeks in summer and fifteen weeks in winter.

To summarize: under the old training system, the whole course, including two weeks at the R.A.F. Depot and four weeks break between the two terms at the flying training school, lasted approximately twelve months. At the end of that, pilots were turned out at what corresponds to the end of the present intermediate stage with practically all to learn about the Service application of flying, which consequently had to be learned after they had passed to the squadrons. On passing out of the flying training school, pilots averaged about fifty hours solo flying on Service aircraft.

Under the new scheme, in force since 1936, including elementary training at a civil school, a short course at the R.A.F. Depot, and two stages at a flying training school, the whole period including breaks is ten months, as against twelve months under the old scheme. But that shortened period includes advanced training in which the pilot has to be individually trained in Service work in the air and made fit to commence collective training in his squadron. His solo flying time on Service type aircraft in ten months is now approximately seventy hours, as against fifty hours for the twelve months under the old scheme.

From this comparison it will be obvious that there must be a greatly increased demand on training schools, which can only be met by considerable pressure not only on the pupils but on all the personnel of the schools. There is no doubt that under the present scheme the courses are undesirably hurried at the expense of general Service training, as opposed to training for a definite and somewhat limited object. But although there is that increased pressure, the increased efficiency of the schools has, I think, met requirements, and increasing efficiency is going on meeting ever-increasing demands. When this pressure will cease no one quite knows, but it is hoped that it will relax in the next two or three years when the initial demands for Air Force expansion have been satisfied. It is the intention that, at the end of the expansion period, the present system shall remain, but that the courses shall be restored to their previous length.

Training Methods

Now a few words about the training methods that are employed and the outlook on training. Dual control instruction almost invariably

precedes solo flying exercises at every stage of instruction. Over the course as a whole a pilot does about fifty-six hours dual control flying and ninety-four hours solo flying. In teaching the handling of an aircraft on the ground and in the air, there is a definite sequence of instruction which is prescribed in the Flying Training Manual, and this is employed in its entirety for teaching flying at the civil schools. In the intermediate training period at the flying training schools it forms the basis of teaching on the Service type aircraft, but, of course, a good deal of the detail can be left out.

In flying training, we now divide dual control instruction into two parts: "dual to first solo" and "advanced dual." "Dual to first solo" covers the whole of the flying method that is to be taught before the pilot goes solo. Nowadays it includes aerobatics and instrument flying under the hood, and covers all the manœuvres that are expected of the pupil during a considerable period after he first goes solo. "Advanced dual" was designed for the correction of faults that may have developed during solo flying and for improving the general standard of pupils who have gained experience by themselves. It is found to be extremely valuable. A pilot flies on his own and develops certain bad tendencies. He gets away from the effects of the original dual, and the advanced dual is mainly for the purpose of correcting his faults.

That is an outline of dual control instruction as it was and as it is now, up to a point. But, since the change of system and the introduction of advanced training in flying training schools, "dual" is also used a great deal for teaching pupils applied flying for Service purposes and for testing pupils' ability in those advanced exercises. For that purpose it has proved most valuable. For instance, "dual" in the advanced training squadron is given before a pilot undertakes "solo" in most of the armament exercises. Similarly, the final navigation test is given "dual" by an instructor. "Dual" in the advanced training squadron is given by any of the so-called "staff pilots," of whom only a small proportion are actually labelled as flying instructors—that is to say as having passed successfully through an instructors' course at the Central Flying School. Most of the staff pilots have had considerable experience in some squadron or other and are, therefore, particularly suited to teach the pupils the sort of work that goes on in the various types of service squadrons.

A feature of modern training is economy of instructional opportunity. For reaching the standards required in the advanced training squadron, the sequence of instruction is arranged with the object of economy in the use of the available flying hours and of the limited opportunities provided by suitable weather and by range allotments for bombing and

gunnery, and other facilities which are definitely limited. It must be appreciated that the amount of flying put in at a school is limited by the number of aircraft at the establishment and their serviceability. In this country, too, weather is another and a severe limitation. Yet another is the fact that we have not a great number of ranges available.

The sequence is therefore :—

(1) Instruction in class-rooms and by studying Manuals, which is the essential groundwork for an understanding of the practical work which follows.

(2) Practical ground instruction, such as ground gunnery, to learn how to handle guns, and work with the bombing teacher in the practical use of the bomb-sight and bombing procedure over a moving landscape target. Another good instance of practical ground instruction is the recently introduced Link Trainer—a dummy aeroplane fuselage on the ground which has all the reactions of a normal aircraft ; it is used for teaching instrument flying and navigation without actually flying or navigating ; it has all the instruments working correctly and it has plotting arrangements outside which the instructor can use for seeing what the pilot would have been doing if he had been actually flying. The instructor can thereby plot out the pilot's faults and everything else.

(3) The third stage in the sequence of instruction is preliminary air training without the use of full scale equipment. That includes such things as bombing practice over a camera obscura by progressive stages up to the practical employment of full bombing procedure without actually dropping bombs. The pupil flies over the camera obscura which throws an image of his aircraft on to a table. He makes a bomb-dropping signal, and that is plotted in the camera obscura office, and the man operating the camera obscura will tell the pilot where his bomb would have gone. Camera gun practice for fixed and free gunnery is another extremely useful thing. The pilot can practice manœuvre and aiming, get a picture of the target, and work out where his shots would have gone. Some of the navigation exercises which we do are on the same lines : we make the pupils do short flights, because we cannot afford the time for very long ones, but they have to employ full navigation procedure just the same as for long flights.

(4) The final stage provides the most realistic training which we can give the pupil with the available facilities. It includes bomb dropping, and firing at targets with ball ammunition under the same conditions as in the normal squadrons, navigation tests, and photographic and reconnaissance tests.

As already indicated, pilots qualify for the flying badge and to carry passengers at the end of the intermediate period at the flying training school. In the advanced training squadrons, therefore, pupils, with the exception of single-seater fighter pilots, fly together, acting alternately as pilot and observer. They are paired off into crews at the beginning of the term and normally remain together throughout the whole of the advanced period.

The majority of the exercises done in the advanced training term are double, instruction being given to both pilot and observer. Details of the exercises are worked out, so that pilot and observer each has to produce a sensible result. An instance of dual training of that sort is in bombing: it trains the pilot to fly steadily and to follow the orders of the bomb aimer so as to put the aeroplane correctly over the target; it also provides instruction to the man in the back in the use of the bomb sight. There is a similar duality in navigation: the observer gets instruction in using navigation aids, which are available for him in the rear cockpit; the pupil pilot, who cannot use plotting boards and things of that sort in the pilot's seat, gets exercise in working out and applying data for himself with such aids as he has got and, of course, in using information obtained for him by the observer. This double training as pilot and observer is a very important part of the system; it gives the pilot a very valuable training in seeing conditions from the observer's point of view and in understanding the effects of good and bad flying on the job of the man in the rear cockpit; it also gives the pupil pilots an opportunity of using equipment in the rear cockpit with which they otherwise would be unacquainted as pilots, but which they may be required to use as second pilots of large aircraft when they get into their Service squadrons.

The importance attached to the double pilot and observer training is illustrated by the fact that we make even single-seater fighter pilots do navigation exercises as observers in the back seat, so as to bring their practical navigational training up to a higher standard than they could reach solely by working as pilots.

The principle of the maximum use of flying time and facilities is, I think, well illustrated by this observer training. Approximately two-thirds of the flying time for pilots of the advanced training squadron

represent duplicated instruction, that is to say, instruction given to two pupils simultaneously instead of to the pilot only.

In recent years there has been a great change in the outlook on flying training. Before that time the gauge of training was "hours flown," it being hoped, of course, that all the hours flown would be usefully employed from a training point of view. Now, it is entirely different. The basis of instruction is definite items of training covered, with repeats as necessary. Training is now gauged by exercises done and standards reached, economy in flying time being essential to cover the very exacting syllabus.

Specialized Groups

In connection with this basic training of pilots the question naturally arises of how far they should be specialized for different types of squadrons. In view of the intensity of work at the flying training schools and the importance of training in elements of flying that are common to all pilots, the schools would prefer to train all pilots the same and regardless of the squadrons to which they are going; that would, of course, lead to the greatest efficiency in numerical output from the schools. On the other hand, operational commands would naturally like their pilots specialized before they join their squadrons. A compromise has been arrived at. Pupils are selected for the type of squadrons to which they are to go at the time when they join the flying training school—that is at the beginning of the intermediate training period. Pupils for similar sorts of squadrons are then put into three main groups for training:—

The Heavy Bomber Group, which comprises training for heavy bombers and general reconnaissance (including flying boat squadrons);

The Light Bomber Group, including training for light bomber, Army Co-operation, torpedo bomber and medium bomber squadrons; and

The Fighter Group, with training for all fighter squadrons but particularly single-seater fighters.

At present, the division results in the employment of three different types of aircraft at the flying training schools. First of all there is the light bomber or Army Co-operation type—a two-seater aeroplane used both for the light bomber group and as basic service trainer for all groups. Then, recently, a twin-engined type has been introduced for the heavy bomber group. Lastly, there has always been a single-seater type for the fighter group. Apart from that slight differentiation in types of aircraft flown, there is differentiation in the actual work to be done by the various groups, particularly in armament training. The

heavy bombers do free-gun firing and no fixed-gun exercises, whereas the reverse applies to the light bomber and the fighter groups. All the groups, except fighters, do bombing.

Summary

To summarize the salient features of the training of a R.A.F. pilot: first of all, there is the recent inclusion of advanced training to fit pilots to undertake the normal work of unspecialized squadrons—by unspecialized I mean the bulk of the squadrons in the Air Force, which are bombers or fighters. That advanced training includes as its main part weapon training and it finishes with a months' attachment to an armament training camp where full-scale exercises are done. Pilots for the unspecialized squadrons are trained up to the point at which they can take their place in those squadrons, but there are certain specialized units for which additional training is given. There are post-graduate courses for those pilots who are going to a specialized unit such as an Army Co-operation squadron or a general reconnaissance squadron.

Secondly, there is the change in the basis of training from hours flown to the number of specified training exercises accomplished and standards attained within the available flying hours.

Economy in flying hours is one of the essentials of the present system of training. Following the same line of economy in the use of flying time, there is also the necessity for the use of economy in the use of full scale and other facilities. That economy is effected by the sequence of instruction—first of all instruction in the classrooms; then, as far as possible, on the ground with substitute equipment, such as the Link Trainer, the bombing teacher, and so on; thirdly, air training with substitute equipment, such as the camera gun and camera obscura. The final stage is full scale.

On top of that there is a system of employing dual control instruction at all stages in air training to avoid waste of time through pupils' making elementary mistakes and having to learn by experience to correct them. For instance, if pupils were sent up without preliminary instruction to use the camera gun against a towed target they would be wasting instructional opportunities and flying hours. Therefore they get over their mistakes when there is an instructor there to put them right at once.

The other most important point in training is that we have brought civil schools to our aid to teach correct flying on light aeroplanes. I think the civil schools effect a very great economy and there is no doubt that, as things are arranged at present, they fit in perfectly well with the Royal Air Force scheme of flying training.

DISCUSSION.

MR. NIGEL TANGYE: I would like to ask for the Lecturer's comments upon what seems a rather curious omission in the R.A.F. syllabus of training—I mean the apparent omission of instruction in poor weather flying. I do not mean blind flying, but flying under difficulties such as may be encountered when on bombing or reconnaissance work, when clouds come down and the limit of visibility is closing in and it not only requires skill but a level head to get home. I do not think anyone would argue against the case that the professional civil pilot is much better at this poor weather flying than the R.A.F. pilot, although, of course, there are exceptions.

The existing training system in the R.A.F. results in the potential efficiency of the Royal Air Force being considerably higher than the actual efficiency, due to this lack of poor weather flying training. The present system is difficult to get over, because you have to put the responsibility for sending pilots up on somebody's shoulders, and at present it rests on those of the commanding officer of the squadron.

I was wondering whether there was any possibility of some scheme being evolved whereby squadron commanders could be relieved from the responsibility of facing a court of inquiry resulting from an accident, so that each squadron commander might be in a position to encourage deliberate bad weather flying as opposed to the accidental bad weather flying of his pilots. If the pilot is taught to fly in poor weather in the vicinity of his own aerodrome, he will very soon realize what the actual bugbears of bad weather flying are, and his attitude towards it will be uninfluenced by the psychological aspect when he comes across bad weather over unfamiliar country.

CAPTAIN E. ALTHAM, R.N.: Could the Lecturer give us any information about the specialized training of pilots for the Fleet Air Arm, particularly in deck landing and in flying off by catapult or other such appliance?

FIELD-MARSHAL SIR PHILIP CHETWODE: How long does it actually take to train a pilot to the standard of efficiency, and do you think that in point of numbers you will be able to cope in war-time with the heavy loss of pilots which seems likely, having regard to the experience in the fighting in Spain?

If I may go outside the scope of the Lecturer's actual subject, I would like to ask him whether he thinks that this terrific speed at which aeroplanes now fly has about reached its limit, or does he think that it will continue to increase? I am asking that because we in the Army are anxious to know when the Royal Air Force will be able to get something like standardization in their machines. When I was Commander-in-Chief in India, I was asked to re-arm the squadrons with Hawker-Harts. I luckily refused to re-arm them all. I had re-armed two squadrons when Lord Londonderry, then Secretary of State for Air, arrived in India. He said the machines were already out of date, and asked me to re-arm with a later type. We nearly "blacked out" then. Indeed, I think the Finance Minister did "black out."

THE LECTURER.

With regard to the question relating to an apparent omission of instruction in poor weather flying, I did not mention it in the course of the lecture but we regard practice in flying very low and pushing the pupil as far as possible in bad weather flying as part of the normal training in every stage. Actually, during the intermediate training period the pupil has a course of low flying over a selected area—where low flying would not cause an annoyance—with dual instruction. The reason we do hot do much actual cloud flying is that there would be too much risk of collision involved. We do instrument flying under the hood in lieu of that. The

training we give to pilots in the flying training schools in facing worse and worse weather conditions is carried on when they get to the Service squadrons.

I was not quite certain about the purport of the remarks on the commanding officer's responsibility for authorizing flights. He has, of course, to assume command like any other commanding officer, and the question as to the suitability of the weather for flying is one of the points on which he has to exercise his command. I do not think commanding officers are expected to play entirely for safety but to exercise their judgment as to whether a pilot should fly on a particular day in particular conditions, the aim being to bring the pilot up to the highest point of efficiency in flying in all conditions.

There was a question as to specialized training for Fleet Air Arm work. The naval officers selected for pilots in the Fleet Air Arm go to No. 1 Flying Training School at Leuchars where they do the same sort of work as at the normal flying school plus a certain amount of preliminary specialized work. They have a catapult at Leuchars and those pilots who are destined for types of aircraft that take off from catapults have to be shot off by it. Catapult instruction, as compared with other forms of training, is extremely simple. They also do landings on the dummy deck of a ship marked out on the aerodrome as a preliminary to landing on the actual deck of a carrier. The fighter pilots who are going to the Fleet Air Arm are, during their period of flying training, detached for float-plane flying.

Sir Philip Chetwode has asked how long it would actually take to train pilots. The answer is, ten months from start to finish.

FIELD-MARSHAL SIR PHILIP CHETWODE: You say ten months, but is that because you are pushing the training in order to keep up with the Air Force expansion scheme; or would you like longer?

THE LECTURER: We would like longer, but we shall have to stick to the ten months' period. Whether that would provide the pilots required for replacing casualties in war, I am afraid I do not know.

As regards the speed of aircraft, I see no prospect of the increase of speed stopping at all. We seem to be getting faster and faster. I am speaking without inside knowledge, but I cannot see any end to that at all.

THE CHAIRMAN:

This question of bad weather flying is one which is giving us a lot of serious thought. Weather conditions for flying in this country are, of course, very bad, and at the moment we are rather hampered by the lack of the necessary instruments coming through. It is a question of production and we are going into the whole question of aerodrome control and wireless. The reason is the difficulty of getting production to keep place with demand. I think that things will improve considerably as we get the instruments and various aids.

As regards the contention that the civil pilot is better, I think that is probably true, because I think in most cases the civil pilot has been a Service pilot and is very experienced before he starts in the civil air line. What we have to compete with is the inexperience of pilots turned out in ten months and put into the squadrons where they fly these high-speed machines. They are not really experienced in these high-speed machines. Experience can only come with time. Things will undoubtedly improve, but I think the cause of the accidents we have been having is purely inexperience. It must improve as time goes on.

I congratulate the Lecturer on having dealt successfully with a difficult subject.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

THE INFLUENCE OF SEA POWER ON THE FIGHTING IN SPAIN

By Vice-Admiral C. V. Usborne, C.B., C.M.G.

On Wednesday, December 1st, 1937, at 3 p.m.

Admiral Sir R. G. O. Tupper, G.B.E., K.C.B., C.V.O., in the Chair.

The Chairman introduced the Lecturer.

LECTURE.

THE Spanish Civil War is still in progress. Not only have both sides established propaganda agencies in London, but in addition great Powers such as France, Russia, Germany and Italy have concerned themselves very deeply in the struggle, and their Press have championed the side supported by their respective governments. All newspaper reports must therefore be read with caution, and it has not been easy to obtain a reliable account of events on which to base an opinion of the extent to which sea power has influenced the contest. My informants are many, and I take this opportunity of thanking them all. The account given here does not guarantee accuracy, though every attempt has been made to ensure it; it is in no way officially inspired and represents only my own impressions resulting from a general study of the events.

As a preliminary, a brief summary of the complex course of events is necessary so that the bones of naval policy and naval strategy may be perceived through their massive fleshly coverings of day-to-day happenings. As far as possible, I shall be chronological. Treated thus, these events fall naturally into eight separate phases.

(1) The *status quo anti*.
(2) The struggle for possession of the Fleet.
(3) From 20th June to the beginning of October, 1936, when the government forces dominated the Straits of Gibraltar.
(4) From October, 1936, when Franco's forces obtained superiority at sea, to 12th March, 1937, when Non-Intervention patrols were imposed.
(5) From 12th March, 1937, to 23rd June, 1937, when Non-Intervention patrols ended.
(6) The so-called Piracy Period.
(7) From the time when anti-piracy patrols were put on to the fall of Gijon on 22nd October, 1937, when the North Coast campaign ended.
(8) Franco's concentrated blockade of the East Coast until to-day.

I will deal briefly with the salient events of each of these phases and then draw my conclusions. It should be noted, however, that this is no classic case of the influence of sea power such as Mahan describes; here we have sea power working under totally new conditions outside the tenets of International Law and constantly interfered with by the action of neutral nations, yet still exerting an immense effect on the campaign as a whole. It is just these new conditions and new precedents which make the study important.

The Status Quo Anti

The elections of February, 1936, gave 265 seats to the Frente Popular as against 208 to the party of the Right and Centre. Apart from the fact that the actual total number of votes cast was in favour of the Right and Centre, those parties were not satisfied that the elections had been fairly conducted. No sooner had the new Government assumed power than great and progressive disorganization spread over Spain and it became the common belief that there was a plot on foot amongst the parties of the extreme Left to capture the government of Spain for communism by direct action. For instance, Senor Largo Caballero stated in public that the Frente Popular was only a stepping stone to the " dictatorship of the proletariat," and again on the 11th May he said: " Bear well in mind my comrades that the revolution we are preparing . . . can only be realized by violence." And on the 24th May he said: " The victory of the proletariat is assured. We shall introduce the dictatorship of the proletariat, and this dictatorship will not be the enslavement of the proletariat, but certainly of the bourgeois and capitalist classes." In May, 1936, the President, Zamora, was dismissed and Azana elected. A speech made by the latter on 16th April, 1937, shows the general awareness in Spain of plot and counter-plot. In this Azana said: " We are witnessing a complete plan of aggression against the public peace and the republican regime." In June, 1936, Gil Robles, leader of the Right, made a protest in the Cortes against the prevailing widespread anarchy which the Government was failing to repress, after which the party of the Right walked out.

It is certain that during all this period there was hatching not only a widespread communist plot to seize the Government, but also a counter-plot by the army, the Carlists and the Royalists to seize power to save Spain from the fate of communism. As proof of the former I have in my possession a translation of certain Communist documents copied from the secret file of Communist headquarters in Madrid in June, 1936, and of which copies were also found in Majorca, at Lora del Rio, near Seville, at Badajoz, and at La Linea, the documents in

each case being practically identical. They are a model for the organization of a revolution giving the secret signals for beginning the struggle, for a general strike, for blowing up railway lines, for closing frontiers and ports, and for the execution of people named on the black lists, etc. There are the fullest details of the action to be taken in Madrid, with the names of the members of the new Soviet government. The revolution was to take place between the 11th May and the 29th June, but it was afterwards postponed on the grounds, so I have heard, that the French Communists were not ready. Spain was divided into zones of assault in which active measures were to be taken, and zones of resistance in which, presumably, a waiting game was to be played. The assault militia consisted of 150,000 men, while the resistance militia for supplementary tasks amounted to 100,000. There was also a Trade Union militia for strike action. The main document ends with : " Attention to the counter-signs. Show blind obedience to officers and liaison agents, and be sure that our triumph is a matter of hours and the Soviet will be established." I mention these documents because they are little known in England, but the evidence of authenticity is very strong. There is no mention of the navy, though the plot extended to the Balearic and Canary Islands, but undoubtedly from what happened after, the men of the fleet were in the plot.

The proof of a counter-plot lies in the events which actually occurred and which showed it to have been thoroughly organized and widespread, though prematurely brought into being. Each side was apparently waiting for something when Senor Calvé Sotelo, who had replaced Gil Robles as the real leader of the Right, was arrested by Government Shock Police in uniform, taken to police headquarters and there murdered. This happened on the 13th July, 1936, resulting in the Nationalist rising on the 18th.

The Struggle for Possession of the Fleet

That the nationalist rising was precipitated prematurely is proved by the fact that General Sanjurjo, who was to command it, was in Portugal, and he was killed in a flight to Morocco. General Franco was in the Canaries, and he was flown over to French Morocco through the instrumentality of an Englishman and only reached Tetuan after the revolution had begun. Possibly the Nationalists feared that the murder of Sotelo was to be followed immediately by the Communist rising and that there was no time to lose.

At this time the Fleet was disposed as follows :—

At Ferrol.—The old battleship " España " was undergoing a big refit. The new 10,000 ton cruisers " Canarias " and " Baleares "

were both still building, and there were also the light cruiser "Almirante Cervera" and the destroyer "Velasco."

At Cartagena, the main Fleet base, there were the battleship "Jaime I," the cruiser "Libertad," ten destroyer leaders, two destroyers, seven submarines, and four gunboats.

At Cadiz.—The cruiser "Republica" and two gunboats.

At Port Mahon, in Minorca.—Five submarines.

At Algeciras.—There was a gunboat, and the cruiser "Mendez Nuñez" was off the West coast of Africa.

The cruiser "Miguel de Cervantes" was on passage from Ferrol to Cartagena.

General Franco has expressed surprise that the navy did not come over to him in a body, from which we may deduce that his counter-plot extended to the superior officers. It is equally evident that the men had been penetrated by the communist propaganda, as it is hard to explain their action otherwise. In general, the ships went to the side which held the port; those at Ferrol, Cadiz, and Algeciras going to Franco, and those at Cartagena, Port Mahon and at sea to the Government. But so brief a statement by no means describes all that happened. At Ferrol the dockyard workers and sailors rose against the officers, who were driven into their headquarters and besieged there. A battle was fought on board the "Almirante Cervera," which the men won. Deep in a dry dock she could not use her 6-in. guns. The men wanted to use these guns to bombard the officers' headquarters and made several sallies to the sluices to flood the dock and raise the ship; but they were too late. The battleship "España" was captured by the Communists and her officers killed. However, the district surrounding Ferrol was under the control of General Mola, who had considerable Carlist and Royalist forces at his disposal so that he was able to send the artillery regiment to the rescue. It arrived in time and soon took the upper hand at Ferrol, but not before the Reds had shot a number of officers as well as sailors who supported them. Admiral Azarola, who commanded the base, was on the government side, and was subsequently tried and shot. The "Almirante Cervera" thus became Franco's most important ship, for the "España" could not be brought into commission for some time. The 10,000-ton "Canarias" was not completed till the end of September, and left Ferrol with a very scratch crew, many of them volunteers and some only just sixteen years of age. As a modern 8-in. cruiser, she was, of course, of the greatest importance. Her sister ship, the "Baleares," could not leave Ferrol till January, 1937, still without her two rear turrets. She has since been completed at Cadiz. Fortunately for Franco, there were two mine-layers, the

" Vulcano " and " Jupiter," under construction at Ferrol, which came in very useful in the northern blockade.

At Cadiz, the cruiser " Republica " was seized by the Reds and taken to sea, her officers having, presumably, been done away with, but on the way out her boilers burst and she was forced to surrender. She was retained as a guard ship for some months but was eventually refitted; her name was changed to " Navarra " and she was added to the Nationalist Mediterranean Squadron.

The " Cervantes " mutined at sea; her officers were killed and the ship taken to Cartagena. At this port there had just been a strike ordered by the Government, during which all houses were searched for arms. On the 17th the Captain of the " Churruca " was relieved of his command by order from Madrid. On the 18th there were only vague rumours that the army had revolted in Africa, but on the 19th July came the first signal of disorder, and it came from the men. A stoker in the dockyard discharged a revolver at a Lieutenant and killed him. Two Sub-lieutenants, who saw the attack, thereupon shot him dead. On the 19th July the flotilla leader " Valdes " mutinied at Malaga, her officers were imprisoned and she sailed round to Cartagena. It then became known that the personnel of the air base had revolted, and orders came from the Government to quell this revolt. After this came telegrams from Madrid relieving one officer after another from his command and ordering the small arms in the arsenal to be distributed among the populace At this time it would seem officers were asked whether they sided with the Government or not, and those who did not were imprisoned in the coal bunkers of an old ship. Here they were kept till the end of July, when twenty were taken to Malaga and executed, followed later by ten more.

The 20th July seems to have been the date for the mutiny in the " Jaime I." She put to sea under her officers, probably from Cartagena, bound for Cadiz, being the only ship to get away,[1] but *en route* the men killed their officers and threw them overboard. Subsequently the ship was bombed by Nationalists but not hit. When the battleship arrived at Cartagena, some time later and after the bombardment of Almeria in which she was severely damaged by bombs, her crew demanded the death of the remaining prisoners. They were taken to sea along with certain army officers and others, three hundred in all, and thrown overboard with their hands tied and feet weighted.[2] The result was that the main body of the Fleet at this port and at Port Mahon remained in the hands of the Government, but with very few officers.

[1] Except perhaps the " Churruca."
[2] " Communist Atrocities," Parts 2 and 3.

General Franco thus had available at the outset of hostilities the "Almirante Cervera," of eight 6-in. guns, the destroyer "Velasco," the unseaworthy "Republica," and two gunboats. In the ordinary course of events superiority at sea should have at once gone to the Government and remained there, but matters fell out otherwise.

Government Forces in the Straits of Gibraltar

A less determined man than General Franco might well have thrown up the sponge in the first few days. It was true that the troops in Morocco had followed him to a man and that he had in the Protectorate a very great reserve of man-power together with the splendid fighting force, largely of his own creation, of the Tercio or Spanish Foreign Legion. But in the South of Spain he had only the slenderest hold and was entirely cut off from General Mola, who possessed a strong force in the North West. He had relied on the navy, and the navy had failed him. With it his position would have been immensely strong, for his base was unassailable and he could land troops where he wanted; without it he was extremely weak.

As early as the 20th July, 1936, we hear of transports bringing troops to Algeciras and of risings at Cadiz, Seville, Saragossa and Pamplona. On the same day the government cruiser "Libertad" bombarded Cadiz, then made contact with the "Jaime I" and "Almirante Cervantes" at Tangier. Three gunboats and three leaders were also there. Bombed by rebel aircraft, they moved across to Gibraltar. Here they were bombed again on the night of the 22nd, and sailed after dark for Malaga.

The use of Tangier was soon put an end to, not only on account of Franco's protests, but because the International Commission of Control preferred to keep the war out of their precincts, and it was eventually agreed that neither side should use it.

During the succeeding days the government side controlled the Straits so effectively by light craft and submarines that Franco was unable to transport his troops by sea. On the 25th July the "Jaime I," "Libertad," and "Cervantes" bombarded Ceuta. On the 5th August the Franco gunboat "Dato" fought a plucky action with two or three government flotilla leaders, keeping them at bay while the transport she was escorting got in. Ceuta was again bombarded on the 5th August, and Algeciras on the 7th August. On this occasion the "Dato" was set on fire by the "Jaime I" and, as it was thought, destroyed; but she survived and was repaired at Cadiz. In the attack on Ceuta the "Jaime I" was hit in the bows and subsequently, on the 13th August, she was bombed by aircraft while lying at Almeria and severely damaged,

so much so that she had to proceed at 6 knots to Cartagena for repair. They made a quick job of the work and she was back at Malaga on the 31st August.

During all this period Franco was under the desperate necessity of getting his troops across the Straits. Every morning he sent men by aircraft to Algeciras, and at night from time to time his troopships ran the blockade, generally to Tarifa. On the 25th July both sides appealed to the Powers for assistance. On the 31st, two Italian planes, out of a squadron of twelve going to Franco's help, were wrecked in French North Africa; the remaining ten no doubt aided him greatly in the transport of troops by air, which we are told reached the total of a thousand a day.

At the same time the Government was negotiating with the French Government for large quantities of munitions, and these were supplied. Volunteers also were being enlisted in France; but on the 1st August that country issued her appeal for Non-Intervention. To this Britain agreed, and without waiting for general agreement, on the 15th August banned the export of aircraft and, four days later, of all war material. On the 21st August, Italy agreed to consider Non-Intervention, and on the 9th September the Committee met, and the ban on war material was, on paper at least, imposed.

Meanwhile the Nationalists made no attempt to interfere with the Government's control of the sea in the Straits. Their small squadron, the "España," "Almirante Cervera," and "Velasco," commenced operations on the 17th August by bombarding San Sebastian and the frontier posts on the North Coast of Spain. Their object was, of course, to cut the communications by the northern railway line from France into Spain, and on the 4th September Irun was taken, thus isolating the Basque country from receiving supplies except by air or sea. To counter this movement the Government are reported to have sent two submarines to operate off Gijon, and from that time until well on in 1937 government submarines have been reported on the North Coast, but they have achieved nothing.

In the Balearic Islands, Majorca declared in favour of the Nationalists during the first few days, and on the 5th August the Government sent an expedition of a thousand troops, covered by the flotilla leader "Almirante Miranda," to reconquer it and to strengthen Minorca. After some delay a force of two thousand five hundred was landed on the East Coast of Majorca, but it failed to advance and the expedition was eventually withdrawn without naval interference.

In August, 1936, the Spanish Government declared a blockade of all Spanish ports in insurgent hands, but H.M. Government informed

them that they did not recognize the legality of this blockade because they had not recognized the existence of a state of war; they also pointed out that, even if they had done so, the blockade of such great areas could not be made effective with the forces available. Following on this the German and British Governments made strong protests in Madrid on account of the stopping of the German liner "Kamerun" and the British steamship "Marklyn." Meanwhile a government submarine, "B 6," was sunk off Gijon on the 19th September by the destroyer "Velasco." On the 21st September the "Jaime I," "Libertad," "Cervantes," and six flotilla leaders sailed for the North Coast to counter Nationalist activities. They remained from the 26th September till 13th October, then returned to Cartagena. They achieved nothing, but during their stay the Nationalist squadron kept out of the way. On the 29th September the Nationalist cruiser "Almirante Cervera," accompanied by the "Canarias," now at last in commission, engaged the two government flotilla leaders "Gravina" and "Almirante Ferrandiz" in the Straits of Gibraltar. The "Almirante Ferrandiz" was sunk and the "Gravina" fled, badly damaged.

The effort of the government fleet in the Straits of Gibraltar was now getting daily weaker, and by the 19th September had practically died away. It is reported that on that day there was a meeting of the Committees of Seamen at Malaga which ended in a struggle between opposing factions at which shots were exchanged. No doubt by this time the lack of officers had caused the ships to deteriorate appreciably. The warm reception given them by aircraft and forts contributed to the result, and lack of discipline did the rest. By the time the "Jaime I" returned, superiority at sea had slipped from Government's hands. The ports of Irun and San Sebastian had fallén to the Nationalists, but Bilbao, Santander and Gijon remained. Ferrol, Corunna, Vigo, Cadiz, Huelva, and Algeciras were in the hands of the rebels, but the Government held everything on the East Coast.

Nationalist Forces obtain Superiority at Sea

Apart from a cruiser sortie which left Cartagena on the 25th October and returned the next day, the government fleet now remained inactive except for a submarine patrol off Malaga. On the other hand, the "Canarias" and "Cervera" were constantly at sea between Cadiz and Ceuta in October, while a gunboat and three armed trawlers formed the escorts bringing the troop transports from Morocco to Spain and no attempt was made by government forces to interfere. On the 22nd November the government cruiser "Miguel de Cervantes" was torpedoed at anchor in Cartagena Bay and severely damaged. It is believed

this was done by submarine " B 5 " as a parting shot on transferring its allegiance from the Government to the Nationalists. Germany was also accused, but in all probability this marks the initiation of Franco's submarine campaign, which later became intensified.

Admiral Don Juan Cervera Valderrama was appointed Chief of the Staff of the nationalist naval forces, and has retained that position till to-day. Vice-Admiral Francisco Moreno-Fernandez commands the nationalist fleet blockading forces and Balearics. The nationalist navy was rapidly organized. The battleship " España " with the destroyer " Velasco " operated on the Basque coast, while the " Canarias " and " Cervera " continued to be extremely active in the South and East. Cadiz was used as a base, and bombarding operations, augmented by air raids, were carried out swiftly and secretly against Almeria, Barcelona and other places, and are believed to have caused a feeling of tension and alarm all along the East Coast. The merchant ship " Ciudad de Valencia " and three others were armed to supplement the cruisers.

Meanwhile active operations against merchant ships going to government ports were begun. On the 4th October the Nationalists declared a blockade of government ports, not recognized by us, of course since we did not recognize them as belligerents. On the 4th November, the Nationalists announced that Soviet ships would be regarded as belligerents ; orders were issued to stop all cargo ships attempting to enter " communist " ports, and ships found to be carrying war materials were to be arrested and their cargoes confiscated irrespective of the ship's nationality. On the 12th December the Nationalists issued a warning that ports on the East Coast of Spain were liable to be mined. At least three Russian ships were taken into port in November, and on the 18th December the Russian " Komsomal " was sunk off Cartagena. During that month the new 8-in. cruiser " Baleares " was sufficiently completed at Ferrol to sail for Cadiz, where her guns were put in, making her ready for action in January. The crews of the insurgent ships are reported to have been full of enthusiasm and justly proud of their achievements.

All this time the government navy was being reorganized and a new decree was published on the 19th November. This adopted the Soviet principle of doubling all appointments. Thus the supreme command was vested jointly in the naval head of the fleet and the political delegate. The latter presided over the Central Committee of the fleet and exercised control over the committees of the ships through their respective " presidents." There were Fleet Committees and Ship Committees, while operations were to be conducted jointly by the head of the fleet and the political delegate, the Central Committee exercising

the functions of control and advice. Under such conditions it is hardly to be wondered at that the morale and efficiency of the government ships was low. Constant defects, real or imagined, developed preventing the ships going to sea. It is rumoured that Russian naval officers were distributed, one to each ship, but that their attempts to enforce discipline were resented. It is also reported that towards the end of December the " Jaime I " decided to take orders from the C.N.T. instead of the Government of the Popular Front and trained her guns on the " Libertad." The " Libertad " and all the flotilla leaders went to sea for thirty-six hours, during which time the Minister of Marine came to Cartagena and the " Jaime I " was brought to heel.

Legal Aspects of Non-Intervention

The Non-Intervention Committee met in London on the 9th October to consider accusations of the Spanish Government against Italy, Germany and Portugal for breaches of the Non-Intervention Agreement. These charges were energetically refuted, and at the same time the Russian Government declared that, unless the violations ceased immediately, they would consider themselves free from their obligations. The charges could not be proved, whereupon Russia declared she would not consider herself bound to any greater extent than the remaining participants.

It was evident that munitions were pouring into Spain on both sides. It is curious that the munitions which are reported to have been sent into government Spain from France, both over the land frontier and by sea between Marseilles and Barcelona, have not been mentioned officially in this country and hardly at all by the Press. Possibly the French Government knew nothing of this; but it seems certain that such munitions were supplied. The Nationalist government declared that in order to stop the illicit traffic of arms into Barcelona it was prepared to destroy the port, and advised all foreign ships to leave, but Great Britain pleaded for a safe zone for shipping, and this was eventually accorded.

On the 18th November, Germany and Italy recognized the nationalist administration as the government of Spain. Great Britain and France decided not only not to recognize it, but not to recognize the right of either side to exercise belligerent rights at sea. Regarding this decision I quote the opinion of Professor H. A. Smith in the British Year-Book of International Law, 1937. He points out that once a country recognizes the existence of a war then according to precedent it should accord belligerent rights equally to both sides. The issue has, he says, been confused during the last few years by the enunciation of the trans-

Atlantic heresy of the Stimson doctrine in 1932 and its somewhat hasty acceptance by the League of Nations, creating in the popular mind the impression that the grant of recognition is an act of partisanship, whereas it is nothing more than the recognition of a new fact. The opinion that belligerent rights can only be conceded when we have granted recognition to an insurgent government is not borne out by precedent. The true doctrine is, he says, that the recognition of the insurgent government is the necessary and logical consequence of recognizing the fact of a war. There are many precedents for this; to quote three, the revolt in Portugal in 1828, the Garibaldi rebellion, and the American Civil War. The question therefore arises, have we recognized that a state of war exists in Spain? Smith answers that we have recognized a state of war, not only by the Non-Intervention Agreement, but also by our treatment of the Madrid government's decrees declaring the insurgent's zones subject to blockade. Great Britain replied that it was impossible for her to recognize any such blockade, since the Spanish Government did not possess the naval force necessary to make it effective.[1] Thus it is implied that the Spanish Government has a right to declare a blockade if they could make it effective, and, since it takes two to make a war, the right of blockade might have been equally conceded to the insurgents. Smith also states that the concession of belligerent rights is a question upon which foreign Powers are entitled to exercise discretion, but if they are not conceded then neutral ships have a right to free and unmolested passage to the quayside of destination.

In this case we have broken new ground by admitting a state of war coupled with a partial concession of belligerent rights. We have forbidden interference outside the three-mile limit, but permitted it inside, and have at the same time strongly advised the Masters of British ships not to enter the Basque ports. This policy gives ground for complaint to both sides. The Basque Government complained that we were assisting the insurgents by advising our ships to respect the so-called Franco blockade. The insurgents complained that our interference at sea prevented their operations being effective. The British Government is fully aware of all these facts. What then is its reason for such a departure from precedent? The reason is that the situation itself was unprecedented. The partisanship of outside nations made it so. Our object throughout, as the Prime Minister has stated, was to prevent this Civil War turning into an European conflagration, and the interests of one side or the other had to play second fiddle to that; that was the mainspring of our policy, and it is impossible in the time available to go into the links which connected that mainspring with the action we took. By denying arms to both sides we operated against the Spanish

[1] This is not strictly in accordance with fact. See page 29.

Government who, as the lawful government of the country, had every right to purchase arms to suppress rebellion. But this disadvantage was neutralized by the fact that arms of all kinds poured into government Spain from Russia and France. Spain took from Russia in the last nine months, says Mr. Eden, 440,000 tons of goods—ten times as much in weight and four and a half times as much in value as in the corresponding period of 1936.

But if non-supply of munitions was a step against the Spanish Government, non-recognition of belligerent rights was a step against the Nationalists. It might have been the other way. If the Government had been able to assert that command of the sea to which their naval superiority entitled them, it would have militated seriously against them, instead of, as it did, against Franco. Our warning to merchantmen to keep away from North Coast ports was ignored, and the British Navy protected them right up to the three-mile limit. It did not protect them to the quay-side, as according to Smith it should have done, and thereby established a new precedent. Possibly such protection would have been too difficult, or possibly too unfair.

It took the nationalist navy some time to realize how such a state of affairs could be dealt with. Eventually they did realize, and as each port in turn was invested—Bilbao, Santander, Gijon—their ships lay outside the port, just out of reach of its guns, and they brought-to by gunfire the merchantmen which the British Navy had escorted to the three-mile limit, just inside it. In this way a considerable quantity of supplies were prevented from reaching their destination.

In July and August of 1937, as far as I can learn, only four ships reached Bilbao, and five Santander, while the average for previous months was approximately three times as great; similarly very few ships reached Gijon in September. But Franco's blockade was much impeded, for as many as 161 ship cargoes reached the Basque ports in the six months from April till September, 1937. Yet there was another factor which mitigated the hardship to the Nationalists. Lest our new procedure should enable British ships to bring to either side munitions from some other country, legislation was introduced, in December, 1936, making it illegal for British ships to carry to Spain any articles enumerated in the Arms Prohibition Act of 1931. This amounted to saying to Franco, "You may overcome them by force of arms with such weapons as you possess, but you shall not starve them into submission."

Meanwhile a scheme had been drawn up for establishing supervision by land and sea which should secure the stoppage of the arms traffic to both sides, and a good deal of negotiation followed. It came into force on the 12th March, 1937. Large numbers of observers were

posted on the Portuguese and French frontiers, while the sea frontiers were divided into four zones to be patrolled by British, French, German and Italian war vessels respectively, on the principle that frontiers belonging to the Nationalists should be patrolled by the French and British, and those belonging to the Government by the Germans and Italians. In addition, merchant ships proceeding to Spain were obliged to call first at a control port where their cargoes would be examined by agents of the Non-Intervention Committee, or, if this were impracticable, the agent would travel in the ship and supervise the unloading. These provisions dealt only with munitions, but it was known that large numbers of foreign volunteers were continuously entering Spain on both sides, and the Non-Intervention Committee tackled this matter also. All countries were eventually agreed on or about the 25th January, Germany and Italy going further and suggesting the withdrawal of all non-Spanish participants in the conflict. On the 20th February, 1937, the Prohibition of Volunteers came into force, the weeks immediately preceding that date showing a marked increase in arrivals.

Meanwhile on the 8th February the nationalist forces, under General Queipo de Llano, captured Malaga, giving the Nationalists for the first time a Spanish mainland port in the Mediterranean.

The Period of Non-Intervention Naval Patrols

On the 8th March the "Canarias" made an important capture. This was the "Mar Cantabrico," a large merchantman, full of war materials including aeroplanes, which just escaped the United States arms embargo by leaving New York on the 6th January. She assumed the name of a British merchant ship, the "Adda," and when attacked sent out S O S signals as from that ship, but the British destroyer which responded to the call, after the situation was explained to her, allowed the "Canarias" to take off her prize. The vessel was afterwards turned into an armed merchantman.

In March the government navy again showed some signs of life, bombarding Iviza and Majorca on the 27th March, and Ceuta on the 5th April.

On the 31st March the British C.-in-C. in the Mediterranean protested to Franco against interference with British merchant ships, and decided to keep British naval vessels ready to assist them when called upon. In this way a good many of our ships were spared being taken into Franco ports, but when they were taken in a demand was always made for their restoration, which demand, after some delay, was invariably complied with. Thus Franco could exercise a delay factor where ordinary cargoes were concerned and blockade rights when he had the

luck to intercept ships carrying munitions, though I do not think any British ships fell into this category.

On the 6th April the British destroyer " Gallant " was bombed by nationalist aircraft. There were no hits and the destroyer replied. It was doubtless a mistake.

On the 30th April the Nationalists suffered a severe loss; the battleship " España," having put to sea to take part in the blockade operations off Santander, struck one of the mines laid by her own side and sank; all her crew but five were rescued by one of her own destroyers. While she was slowly settling down a government aeroplane flew over her and may have dropped a bomb. She did not apparently notice that the ship was sinking. During this month the Nationalists mined Bilbao and exercised great pressure there, while the British Prime Minister reaffirmed our policy of non-recognition of the blockade and non-concession of belligerent rights, the Home Secretary referring to this very truly as a new doctrine. Meanwhile an agitation had been worked up in this country about the Basque women and children suffering from hunger and the danger of bombs, and on the 9th May a British merchant convoy left Bilbao with Basque women and children under British escort. The Nationalists protested but did not interfere.

On the 13th May the British destroyer " Hunter " struck what was adjudged to be a floating mine and lost a number of men killed and wounded. Ten days later Spanish government aircraft from Barcelona bombed foreign shipping lying at Palma, Majorca, and Italy protested to the Non-Intervention Committee. On the 29th of May the same aircraft bombed the German armoured ship " Deutschland " at Iviza, causing severe casualties. Germany retaliated immediately by sending the sister ship " Admiral Scheer " to bombard the port of Almeria, and on the same day that Power and Italy notified their withdrawal from the Non-Intervention scheme. But at the same time the German cruiser " Leipzig " and four submarines were dispatched to the Mediterranean to reinforce the German fleet. As usual, the Non-Intervention Committee took the matter in hand, and by the middle of June an agreement had been reached to provide security for the control scheme and for common action. The concord did not last long, however, for on the 19th June the German cruiser " Leipzig " reported being attacked by torpedoes by Spanish government submarines, and Germany demanded an immediate combined demonstration. This Great Britain could not agree to without a preliminary inquiry to establish the facts, holding that alleged attacks by torpedoes which miss from submarines which are not seen are always rather doubtful. Germany refused an inquiry, and she and Italy accordingly withdrew from the International

Control. This completely torpedoed that organization, but indeed it had never been really effective, for, although it was known that munitions were still reaching government ports, the patrol vessels were unable to report any. France and Britain immediately offered to do the whole of the patrol work, but this Germany and Italy would not agree to.

What reason can we give for these Spanish government attacks on warships? One theory is that they were all genuine mistakes, but it is open to anyone to think what he likes.

The "Piracy" Period

About this time the new Prime Minister, Mr. Chamberlain, in a speech emphasizing the gravity of the situation, showed once more the real objects of British policy. "The peace of Europe," he said, "lay at the mercy of an incautious movement. If some country attempted to intervene beyond a certain point, some other country would find it difficult to refrain from jumping in, and a conflict would be started of which no man could see the end."

At the Non-Intervention Committee the international wrangle continued. Germany and Italy pressed for the granting of belligerent rights to both parties, but to this Britain would not agree. It was evident that among the great nations, France, Germany, Italy and Russia were attempting to use the Committee to further the ends of the side they backed, and a deadlock resulted. It was saved for the moment by the Netherland's suggestion that Britain should be asked to evolve some new scheme of control which should be effective, and Britain undertook to try. Accordingly on the 20th July she proposed :—

(1) The establishment of international officers in Spanish ports in place of naval patrols.
(2) The withdrawal of foreign volunteers.
(3) The accordance of belligerent rights when withdrawal had made substantial progress.

A new wrangle ensued which again ended in a deadlock. Meanwhile the Nationalists seem to have acquired a force of at least four submarines; one or more of these may have come from the government side—one known case I have already dealt with—and it is possible that there was one at Cadiz. It has also been suggested that some were supplied by Italy, or even by Portugal, but I have no proof of either of these statements. Two nationalist submarines were operating in June from Port Soller, Majorca, and these were very active in the approaches to Barcelona, where five Spanish merchantmen were reported sunk by torpedo or gun fire.

In August this submarine activity was intensified, and it spread all over the Mediterranean. Vessels suspected of carrying oil or munitions to Spanish government ports were attacked, regardless of nationality. The campaign was assisted by aircraft. The following is a list of the casualties during this period :—

6th Aug. : Off Algiers—1 British, 1 French and 1 Italian ship, attacked by insurgent aircraft.
11th Aug. : Spanish " Campeador " torpedoed and sunk off Cape Bon.
12th Aug. : Danish " Edith " sunk by aircraft off Barcelona.
13th Aug. : French " Parame " missed by torpedo near Bizerta.
14th Aug. : Spanish " Conde de Absolo " sunk by destroyer in Malta channel.
15th Aug. : Spanish " Ciudad de Cadiz " sunk off Tenedos, in the Ægean, by submarine.
18th Aug. : Spanish " Armuru " sunk by submarine off Tenedos.
24th Aug. : British " Neomijulia " attacked by aircraft off Cape Cruz.
29th Aug. : British " Carpio " missed by torpedoes from submarine off Cape Antonio.
1st Sept. : Russian " Timiriasev " sunk by submarine off Algeria.
3rd Sept. : Russian " Blakoieff " sunk by submarine off Skyros.

If then this great activity is to be attributed to the nationalist navy, as indeed we must attribute it since Italy when accused had indignantly denied having anything to do with it, we must admit that the nationalist submarines had been extremely active That they have adopted a regrettable policy inconsistent with the international convention that no merchant vessel may be sunk without due warning and without the provision of adequate means of escape for the crew, is undoubted. The fact that belligerent rights had not been accorded to the Nationalists by Britain and France can hardly be urged as an excuse, for they had been recognized as the Government of Spain by Germany and Italy, and should therefore have assumed responsibility for the conventions Spain has signed.

Apart from this unlawful attack, operations continued against merchantmen by surface craft. The " Canarias " with other vessels working from Majorca made several captures, while the blockade off the North Coast continued with varied intensity with the aid of numerous mine-sweepers. The captures inside territorial waters included :—

14th July : British " Molton."
17th July : British " Candlestone Castle."
24th July : British " Miripanu."

Two government destroyers escaped from Santander before it fell on the 25th August, and again escaped from Gijon when that town fell. But the only government success was the torpedoing of the nationalist destroyer leader "Churruca" off Cartagena by a submarine. She, however, managed to get into port. Government naval activities were confined to convoying groups of merchantmen into harbour. The "Jaime I" brought her career to a close by internal explosion while lying at Cartagena. This seems to have shattered her, so that she lies disabled and useless and with a heavy list. About the 8th September the "Baleares" attacked a convoy and scattered it, damaging the "Libertad," the "Mendez Nuñez" and a flotilla leader.

The sinking of merchant vessels brought a protest to the Nationalists from H.M. Government in the following terms: "Since belligerent rights have not been accorded to either side, no attack on a British vessel can be justified in any circumstances, nor can she lawfully be stopped at sea. . . . If there is any repetition of these attacks, H.M. Government reserve to themselves the right to take such action as the occasion may demand."

Both the Spanish Government and Russia accused Italy of the sinkings, which accusations, as has been said, Italy indignantly refuted. France proposed concerted action to suppress the piracy, and a conference was held at Nyon on the 10th September, which Italy and Germany declined to attend. By the 14th, Britain and France had agreed that shipping should follow certain routes which would be patrolled by the two navies; Italy was asked to take care of the Tyrrhenian Sea and the Adriatic. This suggestion offended Italy, who desired to share *parri passu* with the other Powers. The patrol came into force on 20th September, whereupon the piracy operations stopped. Subsequently Italy was accorded a larger zone and in November joined in the work. At the same time Britain and France withdrew their coast patrols from Spain, where they had never been of any great value in preventing arms traffic.

The Fall of Gijon

The naval events in the period which followed are relatively uninteresting. The Powers were busy with schemes for the withdrawal of volunteers. The blockade of the remaining northern port, Gijon, continued until it fell on the 22nd October. This event marked the nationalist conquest of the whole of the Basque country, which liberated Franco's northern squadron and a very considerable army. While this nationalist success was of the utmost importance, yet it must be remembered that the Basque country had almost from the beginning

been deprived of supplies of armaments other than those which could be sent by aircraft, while the remainder of government Spain which General Franco has still before him is in a very different case.

The Nationalist Blockade of the East Coast

Franco now concentrated his fleet on Majorca and tightened his blockade—I must use the term although we do not recognize his right; and undeniably this stricter blockade should be of great importance to him. Even if we suppose that none of the European ships subject to Non-Intervention agreement bring in munitions, 19 per cent. of the ships calling at Spanish ports fly the Spanish flag and are therefore exempt from the competence of the Patrol, and another 1 per cent. was always exempt by reason of flying non-European flags. These would be amply sufficient to bring in the munitions, while the European vessels deal with the normal trade. It still remains to be seen what success the Nationalists will have in cutting off supplies.

General Considerations and Conclusions

So much for the series of events which led to the present situation. Without going into the rights and wrongs of the two contestants we must recognize that the Spanish Government, with its overwhelming fleet superiority, ought to have obtained control at sea, and had it done so Franco's revolution must long since have been quelled; but for reasons which we have seen, they failed utterly to grasp the opportunity which the drastic, communistically-inspired action of the crews gave them. Under the energetic action of Admiral Cervera the nationalist fleet assumed the sea power which the ineptitude of the government forces gave them. But, having grasped it, non-recognition of belligerent rights fell upon them like a curse and prevented them making full use of what they had won. Neither can it be claimed with any justice that the intervention of Italy and Germany offset this disadvantage. Mr. Eden said on the 1st November, 1937: "It is easy to exaggerate the importance of foreign nationals in Spain, but if they are to be proclaimed—if for instance the Hon. Member for Derby is to advertise the Italian victory at Santander—equally in justice to very brave men, we must proclaim the fact that the International Brigade saved Madrid a year ago. The Government have a vitally important frontier, the sea, and everybody who has watched the course of the war closely knows the very important factor which the freedom of access to Spanish ports in the East has been to the Spanish Government. There have been enormous quantities of material arriving in Spanish Government ports throughout the year, including large figures for tractors and

fertilizers, oil and oil products—I could not stand at this box and tell the House that during the summer months of this year there had been more material reaching the insurgent forces than there had been reaching the government forces; I could not say that."

Under *force majeur* Franco did what he could to cut off supplies to his enemy in the conditions imposed upon him. His success was only partial, for even on the North Coast, except for the port on which he was concentrating at the moment, ships passed in and out with great freedom. In ten months from December, 1936, to September, 1937, well over two hundred British ships entered North Coast ports, at least two hundred entered southern, i.e., Franco, ports, and between four hundred and five hundred entered eastern ports. To these must be added vessels sailing under other flags. Against such numbers the captures made by the nationalist navy are almost insignificant.

General Franco has suffered under a policy the object of which was the prevention of European war. Can anybody say what would have happened if, in the alternative, and considering the intense desire of Fascist countries not to see communism installed in Spain, the strong French feeling engendered partly by propaganda in favour of the Spanish Government side and partly by real sympathy, and the power of Great Britain to supply either or both sides with unlimited munitions, the war had been treated according to old-time precedent and both sides freely supplied?

At the very beginning of the Civil War I ventured to predict that Franco would win if he could obtain command of the sea and provided his military forces would fight for him. Both conditions have been fulfilled. Without them he would certainly have lost; with them, even under the limitations he has suffered, my forecast seems in a fair way to be fulfilled.

DISCUSSION.

COMMANDER H. PURSEY, R.N.: I went out to the North coast of Spain first as a Press correspondent and afterwards as a mining expert.

There is one point on which I should like to correct the Lecturer: the Basque Coast ends just to the West of Bilbao; it does not include the Provinces of Santander or Asturias.

The number of ships which went into Bilbao in April, when the blockade was discussed in the House of Commons, was 71; in May it was 95. The number that went into Santander in April was 32, and in May 59. Bilbao fell on 19th June, and Santander on 26th August. I spent three weeks in Bilbao collecting information and the rest of three months in Santander and elsewhere. The turning point in the blockade was the fall of Bilbao. It also marked a change in the policy of our own

Government, who altered their warning to British ships going to northern ports. At the same time the insurgent navy took a firmer line as regards the capture of ships.

So far as the North Coast was concerned, I doubt if any ship was actually arrested by the insurgent vessels inside the three-mile limit. It is not the usual practice of a London policeman to stand in Trafalgar Square, blow a whistle, and expect a wanted man who is at the doors of this Institution to give himself up. A French Captain, referring to the working of Non-Intervention, said to me that he would be better off running contraband at his own risk than working under Non-Intervention. In the former case he would take care to avoid trouble, but under Non-Intervention he was fired on by insurgent ships both inside and outside the three-mile limit. Our ships were certainly fired on inside and outside that limit.

I should like to ask the Lecturer whether he has any knowledge of the activities of German and Italian warships, which, incidentally, were not subject to the non-intervention scheme. Has he known of armaments and war material being taken to insurgent territory in that way ? Has he any knowledge of support given to the insurgent naval forces by German and Italian warships in reporting the whereabouts of Government warships and other matters ? It has been held that the failure to a great extent of the government warships was because the insurgent warships had the support of German and Italian vessels off the coast.

I would also like to ask whether he has any knowledge of foreign technicians on board insurgent warships. Among the documents which I saw at Santander was the in-and-out book of the " España." This gave a long list of German technicians arriving on board that vessel. If that happened in the case of one ship, it is likely that it happened with others.

The Lecturer has not dealt with the question of mines. Mines were a contributing factor in the blockade, although they were largely bluff. On the two occasions this year when mines were laid off Bilbao, some two-thirds of them were empty and the others inefficiently laid. No merchant ship was damaged by mines. The Insurgents recently announced a mine blockade on the East coast, but obviously, they could never have mined an area as large as they claimed to have done. That now has a bearing on the question of ships going to the East coast.

LIEUTENANT L. CLIVE : On the general question of sea power, it did not appear to me that the Lecturer quite brought out the amount of assistance which the Insurgents in Spain have received from the Italian and German navies. He mentioned the incident of the bombing of the " Deutschland." It was asserted from government sources that that ship was only bombed because, lying as it was in one of the insurgent harbours, it definitely fired upon one of the government aircraft which was going over. As a result the government aircraft bombed it, and the consequence was that Almeria, one of the government ports, was very severely damaged in return. Then there was the case of the " Königsberg," which spent a Christmas week-end on the North-West coast of Spain hunting various merchant ships in revenge, as stated by the Germans, for a merchant ship of theirs taken by Government submarines because it was carrying war material.

As to the piracy period, at a time when it was still being asserted that Franco had not more than one submarine at most, there were considerable numbers of ships being sunk, not only in Spanish waters, but off Castellamare and between Scilly and the African coast, and two or three ships as far afield as the Ægean. The Turkish authorities indeed were very much alarmed when they observed an unknown submarine right in the Black Sea. It is difficult to suppose that submarines,

whether they belonged to Franco or anyone else, were operating from Spanish ports at a distance of 2,000 miles.

On the question of the North-West coast, Commander Pursey has already brought out the point that the blockade was nominally carried on by Franco, but was in fact being made doubly effective by the action of the British Government in strongly advising merchant ships not to proceed into the ports. There was the famous " Potato Jones " who, according to the report in *The Times*, was definitely ordered back by a British destroyer, whereas he had a perfect right to run the blockade if he liked.

MARQUIS DEL MORAL: Assertions have been made in this Discussion as to actions that have taken place ; but I want to point out that they are purely assumptions ; they are not based on facts. What evidence is there that Franco's submarines were working in the Black Sea, or what proof is there that these submarines in the so-called piracy period which were working in the Mediterranean were Franco's ships at all ? If I may offer an assumption myself, in view of what has taken place and the great assistance given by Russia and other nations to the Red Government of Valencia, why should we not assume that these submarines were Russian. There is the same justification for assuming that as there is for assuming that they were Italian or German submarines or the submarines of Franco.

VICE-ADMIRAL G. O. STEPHENSON: The Lecturer pointed out that both sides suffered a certain handicap in exercising control of sea communications, but he did not tell us to what extent air forces exercised any considerable influence on this aspect of the war. He told us that at the beginning when General Franco wanted to get his troops across from Africa, his aircraft made about fifty trips a day, so he evidently had a fairly large air force at his disposal. Did he use that air power to upset the enemy's control of the sea communications, and if not, why not ? What was the number of air attacks on ships generally, and what was the percentage of successes ? There certainly was the air attack on the German ship, but I do not know whether, in view of the reprisals which followed, that is to be considered a success or not.

LIEUTENANT-COMMANDER R. M. FREER, R.N.: I speak with a little experience of the North coast of Spain, and I should like to point out that Commander Pursey's analogy of the policeman in Trafalgar Square blowing his whistle and expecting a man in the middle of Whitehall to give himself up is not a true one : the whistle would not be heard ; but a gun can be heard a long way at sea and the splash of a projectile can be seen ; the London police do not carry revolvers !

On the question of the number of ships which entered Bilbao, that depends a good deal on the size of the ships. If every small vessel is counted the number may appear large. It depends where the line is drawn. Once British ships are in Spanish ports nothing can be done to save them. It is not merely a question of blockading ships but of bombing aircraft. Obviously, the thing to do is to stop such ships going into the ports if possible.

THE LECTURER.

I stand corrected by Commander Pursey about the wrong use of the expression the " Basque coast." I used it in the general sense as compassing the whole of the North coast of Spain.

With regard to the numbers of ships, I think I did say that the numbers I gave you were " at least " so and so. There might have been, and no doubt were, many more. As each port was concentrated on in succession by the Nationalists, they

were able very greatly to diminish the number of ships entering it. In the other ports not concentrated upon, the in-and-out traffic was fairly free. With regard to the three-mile limit, the warship generally lay outside that limit and held up the merchant ship when it crossed the line.

With regard to any knowledge I may have of operations by German and Italian warships let me at once say that I have no such knowledge. I know the warships were there, but if they did help Franco or the other side, I do not know about it. As for technicians it is well known that a great many German technicians were poured into Spain on the nationalist side before the ban was put on volunteers. Whether any more came after that I cannot say.

The question of mines was one that I had not time to go into, but, of course, mines were used a great deal by Franco. He had two minelayers, but the only positive result was that he blew up his own battleship, the " España." She hit a mine, and while she was sinking slowly, an aeroplane flew back to the Basque country and when it was heard that the " España " had actually gone down it was claimed that she had been sunk by bombs from this aeroplane.

With regard to Lieutenant Clive's remarks, the Italian Government has expressly denied that they took any part in the piracy sinking by submarines of merchant ships. It remains a mystery, but we do think that Franco had submarines. All we know is that at a certain time the piracy spread like measles all over the Mediterranean from three focal points.

With regard to the " Deutschland," the German Admiral reported that she did not fire at the hostile aeroplanes either before or after the attacks. It is held that the attack on the " Deutschland " was a mistake, as were all those other attacks on warships, some of which I cited.

In reply to Admiral Stephenson, fifty aeroplane trips a day does not involve a great many aircraft, and I do not think that Franco had a great many. As far as the use of aeroplanes to attack Government ships was concerned, in the Straits of Gibraltar this method of attack was used to a considerable extent, and a submarine was damaged. But I do not profess to have gone into the statistics of air bombing very closely.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

THE NATIONAL WILL TO WAR

By CAPTAIN K. P. SMITH, *p.s.c.*,
The Royal Berkshire Regiment (Princess Charlotte of Wales's)

" Let it suffice that no Estate expect to be great that is not awake upon any just occasion of arming."—BACON.

A LONG history of success in war has rendered the average British citizen particularly averse to the forebodings of a military Jeremiah. It is with some diffidence, therefore, that the writer essays to describe the " will to war " of the civilian population as the weakest link in our defensive armour—a weakness which if it is not repaired might seriously prejudice our chances of surviving a war fought under modern conditions.

Although official views may differ from those expressed in this paper, it is appreciated that the various points at issue have not escaped the attention of appropriate authority. At the same time the subject is one which has a direct bearing on the military security of the country and thus *ipso facto* merits much more consideration on the part of all serving officers. Friendly discussion reveals that the average officer is either profoundly sceptical or even in complete disagreement with many of the facts and conclusions which are contained in these pages. The most general criticisms are that the writer displays a tendency to exaggerate the significance of what are, in the critics' opinion, imaginary dangers, and that he has an unreasonably poor opinion of the British character. But, with all due deference to such critics, the question under consideration is largely one of civilian psychology, a subject concerning which the average officer is singularly uninformed. Under the circumstances of his environment he is, to a great extent, segregated from the vast number of social and political factors which react upon the psychology of the civilian masses and influence their attitude towards national defence.

If, as the times indicate, the civilian and the professional fighting man are to be equally concerned in the prosecution of a future war, it seems logical that a comprehensive and mutual understanding of the common implications of such an eventuality should be developed in time of peace. If the civilian contribution fails, or even partially fails, it is certain that in a major war, however well armed and efficient they

may be, the regular and auxiliary forces of the Crown will be unable to achieve victory by their own efforts alone. Some of the more pertinent factors which might lead to the breakdown of the civilian contribution to the national war effort are therefore briefly considered in this paper.

The Subject in Retrospect

The subject possibly lends itself to various interpretations as may also the complementary term " a military nation " to which frequent reference is made. In order, therefore, to avoid confusion of the issue it is advisable for the writer to state briefly his own definition of both phrases. The qualification " military " may be appropriately applied to a nation which in anticipation of possible war makes material and moral preparations in peace time on such a scale that the whole activities and resources of the country are available for war purposes. Similarly, the implied definition of " the will to war " which has its peace-time and war-time equivalent is, in the former circumstances, the voluntary and concerted effort of the people to implement the policy of war-preparation, and in war-time the subordination of all other interests to that of defeating the enemy.

Needless to say, Great Britain does not conform with this definition of a military nation ; neither does " the will to war " in its peace-time application constitute one of her national characteristics. This does not, however, imply that her people are devoid of military qualities. Countless campaigns on land and sea since the early days of her history are sufficient evidence that as a race the British are brave and resourceful fighters. On the other hand, until 1914 the waging of war was chiefly the business of the professional fighting men. In this connection Great Britain's main contributions have usually been in the form of sea power, and her land efforts were confined to small military expeditions in support of the larger armies of continental allies. Thanks, therefore, to her consistent policy of being predominant at sea, combined with a judicious limitation of land commitments, she neither experienced invasion of her shores nor suffered, even during the most war-ridden periods of her history, any serious dislocation of her normal domestic routine. With the exception of the Great War and, to a lesser extent a temporary scare of invasion during the Napoleonic wars, there has been therefore no incentive to her to become " a military nation." On the contrary, for a hundred years following Waterloo the development of her great industrial wealth—combined with the general contentment of her rural areas—engendered a deep regard for peace, a consequent mistrust of any policy which was believed to savour of militarism and, as long as she possessed a strong navy, an attitude of complacency to all

other matters of defence. To this attitude which influenced both governments and governed alike may be ascribed the responsibility for the initial disasters of the Crimean, the South African and the Great Wars, as well as many colonial expeditions. Yet, paradoxically, on such occasions public opinion has invariably been deeply stirred. Whilst victories have been acclaimed with patriotic enthusiasm, reverses have profoundly affected the nation with the consciousness of lost prestige, and a determination to retrieve it at all costs. On such an occasion as the relief of Mafeking, therefore, a casual observer might with reason deduce that, given an incentive, Great Britain was not so fundamentally lacking in the qualities which go to make a military nation as was generally believed. Yet the sound of the last shot has scarcely died away before the drama of war passes out of mind, the skill of our leaders and the valour of our soldiers are forgotten, and the traditional attitude to all things military resumes its accustomed place in our national life.

From this brief resumé of pre-war history, therefore, it may be reasonably assumed that most of the necessary qualifications for a military people, such as patriotism, unity, discipline, tenacity, are inherently characteristics of the British race, but the circumstances of our history were such that it was never thought necessary to weld them into a " national will to war." No one ever imagined that one day such a process might be necessary. Consequently, Great Britain steadfastly remained until 1914 a non-military nation. It was not surprising, therefore, that the revolutionary character of the Great War and its main implication that modern war involves the whole nation came as somewhat of a shock to the conservatism and excessive complacency of the British people. Yet the amazing way in which they adapted themselves to the new and unexpected conditions was an accomplishment without parallel in our history. For four years Britain adopted the status of a military nation even submitting to the previously despised continental custom of conscription. Thus, by the exemplary conduct of the civil population as well as by the heroism of her citizen soldiers, it was confirmed for the first time in history that, granted a just cause and sufficient incentive, the people of this country were ready to give full expression to the " will to war " as long as the dangers to their country and their cause were apparent. This last qualification, as will be seen later, is of particular significance to the subject at the present time.

The Post-War Era

The events of the last twenty years, however, have sadly disillusioned those who believed that these qualities in their application to matters affecting the defence of the country had come to remain as a more

evident feature of our national make-up. On the contrary, the appalling casualties and the economic dislocation of the War engendered such a revulsion of feeling that, after the Armistice, the pendulum swung completely the other way. No longer was war to be recognized as a legitimate method of enforcing national policy; it was a hideous relic of the dark ages and would never again be resorted to by the enlightened peoples of the modern world. The hackneyed catch phrase that the War had been fought in order to end war was taken by our people at its literal interpretation, and they naïvely entrusted the consummation of their theories to the newly constituted League of Nations. A wave of impracticable idealism thus swept over the country and engulfed in its wake all classes of the community; our fighting Services were reduced to such proportions that, as was clearly demonstrated last year, they were no longer a factor to be relied upon either in the preservation of world peace or in the enforcement of national policy; pacifist organizations sprung up all over the country; literature, the Press, films, politicians, peace ballots and countless other agencies carried out a ceaseless campaign of anti-war propaganda.

The obvious result of all this was a very pronounced decay in the qualities which are necessary to inspire the "will to war." To so low an ebb in this respect had we sunk in 1935, that the then Prime Minister has since admitted that he dared not, at that time, take the action which the international situation indicated to be imperative for fear of risking a political landslide.[1] The repercussions of this deterioration of the British people's "will to war" are consequently reflected in the unsettled state of the world to-day.

By 1936, however, the cold logic of recent events had commenced to make its influence felt on public opinion. Consequently, there has been a steadily increasing appreciation of the dangers with which the international situation is fraught and of our inability to play our part in the preservation of peace. Thus the general attitude of the country towards defence has changed very considerably during the last twelve months. Even those political parties which have in the past opposed most vigorously all military expenditure have intimated that they support, in principle at any rate, the government's programme of rearmament and passive defence measures.

To the superficial observer it might, therefore, appear that this apparent *volte-face* of public opinion indicates that the old "will to war"

[1] This raises the interesting question as to whether a democratic government should merely confine itself to giving effect to the will of the majority of the nation or whether it should take active steps to enlighten and educate the nation in a full understanding of vital issues.—EDITOR.

has staged a successful come-back. Yet a close examination of the circumstances will reveal that beyond expressing approval of the government's programme and agreeing " to foot the bill," the majority of the British public has given little tangible evidence of its desire to play any further part. On the date of writing, the Territorial Army is many thousands short of establishment whereas, with all due allowances for obvious exemptions, there are available enough young men to complete this deficiency at least fifty times over. There are, moreover, still some employers of labour who actively discourage T.A. service. The shortage of recruits for the Regular Army and Supplementary Reserve is another serious factor. Strikes and subversive propaganda still feature in firms engaged in the manufacture of war material. Pacifists and anti-war organizations still openly expound their theories and subvert the wills of British citizens to defend their country and, closely associated with all these unsatisfactory features, is the general dislike of discipline and service which characterises the present age, at least in this country. It is difficult to reconcile these flagrant examples of national weakness with the prevalent opinion that we are ready for any emergency.

These assertions may be unpalatable, but ample evidence is available to prove that they are true. That such a state of affairs should be possible during a period of national emergency is largely due to two reasons. The first, which will be considered in greater detail later, is the firm foothold which post-war doctrines and sentiments have established amongst certain sections of the community. The second is the national characteristic of complacency and its myopic influence on the attitude of the great majority of British people towards matters of defence. It may be argued, of course, that the recent general improvement in defence consciousness indicates that the nation is fully alive to the needs of the situation. To those who hold such an opinion an unbiassed and systematic discussion on the subject with a number of individuals selected at random from any or all classes of society is strongly recommended. To those who undertake such an experiment it will soon be revealed that, although the average British citizen appreciates that Great Britain cannot remain unarmed in an armed world, he is, nevertheless, singularly uninformed, unimaginative and frequently disinterested as regards even the most elementary implications of the policy which has, in theory anyhow, his unqualified support. Under these circumstances it is not surprising that he fails to attach any significance to those elements which in our daily life have a disintegrating effect on the national will to war.

In its various manifestations this attitude is a modern conception of

the old traditional complacency which has ever characterised the peace-time periods of our history and which, as we have seen, has its origin in the age-long immunity of our civil population from contact with the grimmer realities of war. It is not surprising, therefore, that in spite of a temporary lapse in recent years, during which he displayed a penchant towards "collective security," the average Briton accepts for granted the invincibility of his country. If either war or, as at the present time, a tense international situation convinces him that our fighting Services require attention, he will, within limits, respond. But if he is not so convinced, or if, also as at the present time, he is unable to appreciate the full significance of existing dangers, he smugly resents any attempts to impress upon him unpalatable truths or to suggest any course which he regards as an attack upon his democratic liberty.

There is nothing new in this attitude. In the years before the War Lord Roberts advocated measures which, if they had been adopted, might quite conceivably have prevented the disastrous course which history subsequently followed. Moreover, for the eighteen years following the late war a minority of citizens protested unceasingly against the obvious folly of disarmament, the far-reaching consequences of which are reflected in the chaotic state of the world at the present time; as happened in the case of Lord Roberts, so too were these visionaries subject to the scorn and moral indignation of the bulk of the country. To-day there are once again a number of citizens who, at the risk of being dubbed die-hards, alarmists, etc., are convinced that the security of this country is jeopardized by indifference, by complacency and by the lack of moral and physical preparedness to face up to the consequences of a modern war.

In former wars, the last included, complacency although more often than not responsible for much initial loss of life and prestige has never affected the eventual outcome. There has always been time and opportunity for the country to pull itself together, to repair initial mistakes and to carry the war to a successful conclusion. But this conception of waging war—so convenient to our national character in the past—has been radically altered by two developments of far-reaching significance: the first is the meteoric growth in power of certain totalitarian states; the second is the continual progress made in the application of science to modern methods of war.

Amongst the many changes brought about by these ominous developments, there are two which particularly concern the subject of this article. The first is the new conception of the military objective. In the past the military objective has almost invariably been the enemy's armed forces, the defeat of which has enabled the victors to impose

their peace terms on the vanquished. In modern war, however, the will of the people has in itself become a direct military objective. Thus victory or defeat will, particularly in the case of a highly industrialized country, depend largely upon the steadfastness of the civil population in the face of aerial bombardment and other morale destroying agencies. The air raids of the late war may be regarded as insignificant when compared with the potentialities of the future. Yet, on those occasions there were not only distinct indications of panic and a clamour for the diversion of fighter squadrons from the theatre of military operations, but interruptions occurred in the production of war material on a scale out of all proportion to the intensity of the raids. Capability to withstand the terrors of air bombing and to win the war under conditions of material and moral disorganization on the home front will postulate qualities on the part of the civil population for the cultivation of which ordinary peace-time routine provides little opportunity. The peace-time training of the fighting Services is largely directed towards the development of morale against the day of battle. If, therefore, the civil population are to be in the front line in wars of the future, surely they should be likewise trained, nerved and disciplined in peace-time to carry their country through the worst possible conditions they may be called upon to endure. Unpopular though the comparison may be, it cannot be ignored that the wills of the civil population of totalitarian states are being subjected to such a process, although the targets their cities present to aerial bombardment are potentially far less vulnerable than those of Great Britain.

The second vital difference between past and future wars lies in the time factor. No doubt, if war should break out again the bulk of the country would rise to the occasion as it did in 1914; but modern scientific inventions preclude any possibility of a prolonged and uninterrupted period in which to build up our war machine and nerve the nation to the ordeal of aerial bombardment and blockade. The former confronts continental nations, but it is a greater menace to us owing to our peculiar vulnerability to that form of attack. In other words, our insularity has largely disappeared and we must regard ourselves as being geographically part of the continent so far as the necessity for being ready to operate our war machine is concerned; moreover we must prepare to use it under extremely unfavourable conditions from the day on which hostilities commence.

With considerable justification it is universally recognized that a strong British Empire is the surest guarantee for peace. But rearmament of her fighting forces and the intensification of air raid precautions are facts which by themselves are no indication of strength. Armaments

and passive defence measures are unlikely to deter a potential aggressor if he has reason to believe that the civilian " will to war," in other words his intended military objective, is only partially developed. This will can only be fully developed if every British citizen is trained both morally and physically in peace-time to take his place without delay in his country's war organization. In other words, modern war conditions demand a degree of preparation which can only be attained by adopting unreservedly the status of a military nation. Naturally, under the influence of the old traditional attitude towards anything which savours of militarism, British public opinion would resent any attempt to enforce such a policy in peace-time ; but, if we genuinely wish to prevent war by a bold display of our strength and preparedness these prejudices must be broken down. It is by his failure to appreciate the cold, hard logic of these facts that the complacent British citizen is himself a weak link in his country's defensive armour.

Weak Links in our Armour

Whilst, generally speaking, the British are inherently patriotic and are, under circumstances of extreme provocation, prepared to resort to war, there are at the same time a great number of citizens who still adhere to the pacifist and extreme political theories of the post-war era. As the military strength of a country is to a great extent dependent upon the degree of national unity on the issue of " peace or war," the existence of powerful and active minorities whose activities are directed against the achievement of such unity, is obviously a great handicap to our defence organization. As the presence of these disintegrating elements vitally concerns the subject of this article, a very brief consideration of the problem they present is not out of place.

Political Extremists

One of the privileges enjoyed by citizens of a democratic state is the liberty accorded to individuals to express their political views, however distasteful they may be to their fellow citizens. In principle there is much to be said for such freedom of expression, provided that it is not directed against the security of the state. There are, however, existent in this country to-day certain organizations whose avowed object is to overthrow the existing social order, if necessary by militant revolution. Appreciating that little opportunity will occur for their schemes to materialize in peace-time, they are prepared to defer the occasion until the country is involved in war. The undermining of the " will to war " of individuals connected with defence organizations, thus facilitating the production of chaotic conditions at a critical period, is an important

feature of their programme. It is, for example, well known that a systematic campaign has existed for some time to interrupt the manufacture of munitions for national defence by the introduction of political cells into armament factories and dockyards, etc. Furthermore, under the direction of a foreign organization, efforts have been made to establish similar cells with the idea of subverting the loyalty of the fighting Services. Finally, there is indisputable evidence that these same elements have been able to penetrate and utilize for their own ends the national and international organizations to which numbers of peace movements are federated.

In peace-time attempts to seduce the allegiance of the Services or to produce disaffection in government institutions are, when discovered, dealt with appropriately, although little restraint is imposed on other activities. But in war, when all energies are required to maintain the fighting Services and to sustain national morale, the subversive machinations of these elements might well sabotage the country's cause.

Pacifism

Pacifism in its present virulent form is a product of the post-war era. During the Great War the number of conscientious objectors was negligible. To-day it may be assumed that the membership of the more extreme pacifist organizations can be reckoned in thousands, and their numbers are increasing daily. The essence of their creeds may be summarized as being that to take part in war either in a combatant or non-combatant capacity is morally wrong, and that armaments, far from being a panacea, are a certain cause of war.

Admittedly recent events have served to disillusion many erstwhile pacifically-minded people, but the more extreme organizations—such as the Peace Pledge Union—have not been similarly influenced. On the contrary, the decision of the country to rearm has resulted in an intensification of pacifist propaganda. New groups for this purpose are still in the process of being formed throughout the country. By cleverly conceived answers, the illogical aspects of which are not always apparent to the man in the street, they endeavour to counter the obvious arguments which are put forward for strengthening the defensive potentialities of the country.

So sincere are the convictions of the majority of the pacifists it is certain that no measures, however drastic, would compel them to take part in war. From the point of view of their present numbers alone they thus constitute a problem which cannot be ignored in our national defence scheme. The existence of pacifism would therefore appear to be a *fait accompli* which, for the time being, we must accept; but that

no restraint should be imposed on the efforts which are being undertaken to extend its influence would appear to be under present circumstances both illogical and extremely dangerous.

Education

Although the situation in this respect may have improved recently, there appears to be no doubt that anti-military and anti-patriotic instruction has featured in the curriculum of many elementary schools for some time; consequently many youngsters who leave school with their minds impregnated with these doctrines fall an easy prey to those organizations which have just been referred to. Nor is the assimilation of these theories confined to youth educated in elementary schools. There is every indication that similar views are cultivated by many students at our Universities, whilst the inculcation of patriotism features much less than it should do at many public and secondary schools.

The youth of to-day may, of necessity, be the fighting man of to-morrow. Surely, unless they are taught when young that it is a citizen's duty to defend his country, they will start at a grave disadvantage if some future crisis compels the country to adopt conscription. By way of contrast, the semi-military education of the youth of totalitarian states cannot be entirely disregarded. One is sometimes forced to view with apprehension the possible outcome of events if at some future date the products of the two educational systems meet in battle.

INTERNATIONALISM AND DEMOCRACY

The "Peace Ballot" held three years ago, whereby several million Britons were induced to record their implicit faith in collective as opposed to imperial security, adequately demonstrates the extent to which the country's outlook had become influenced by international idealisms. Fortunately, the rapid march of subsequent events revealed to most people the true nature of this fool's paradise. Thus the inability of the League of Nations to prevent successive acts of aggression has modified confidence in that institution. No attack is implied hereby on the ideals for which the League of Nations stands and no criticisms are intended of any government, our own included, whose policy is to make "collective security" a practical proposition. But, some criticism is levelled at those citizens, and there are many of them who are prepared to risk material British interests, even to the extent of war, on the extremely hypothetical surmise that such a course will assist their international ideals to materialize. One has a very strong suspicion, therefore, that much of the support given to the present rearmament

programme is only on the assumption that a strong Britain is the most effective agent for the re-establishment of League ideals.

Closely associated with this international outlook is a very pronounced and understandable desire in certain quarters to consolidate what remains of democracy in Europe. The ruthless suppression of that form of government and the coincident increase in power of certain totalitarian states are developments which have given international democrats very good grounds for anxiety as regards the future of their faith. This article is not, however, concerned with the political or other aspect of democracy as a species of government. If it is considered to be the most suitable method of governing this country, then British democracy is *ipso facto* a primary British interest, and as such must be preserved from any internal or external interference. But, on the other hand, democracy in its wider and international conception is not necessarily a British interest, any more than are monarchial, republican or other systems of government. A reference back to the late war may make this point clearer. At that time one heard a great deal about fighting " to make the world safe for democracy." If that was the case, judging by the subsequent fate of a number of democracies, we lost the war. In actual fact, of course, our men in the trenches were inspired by patriotism : they fought for their King, their country and their homes, and not for any nebulous political theory or international ideology ; and we won the war. However laudable, therefore, the tenets of democracy and international peace movements may be, they are not in their more general application factors to which primary consideration should be given at a time when more positive British interests are at stake ; nor do they provide the incentive which a Briton requires to develop his " will to war."

At this juncture a digression is indicated in order to classify the causes for which, all attempts by peaceful methods having failed, the people in Great Britain would be willing to commit their country to war. The opinions of individuals, societies, political parties, would naturally differ on such an issue, but it is submitted that these diverse elements would, each according to their convictions, go to war, or not as the case may be, for one or more of the following reasons :—

(*a*) *A war fought under the auspices of the League of Nations.* There was ample evidence of such a tendency in certain quarters during the recent Abyssinian crisis.

(*b*) *A war to rescue democracy* when that form of government is threatened by interference on the part of an undemocratic Power. The persistent clamour by certain individuals to involve this country in the Spanish conflict is a case in point.

(*c*) *A war brought about by a direct threat to vital British interests* in any part of the world.

(*d*) *A war either caused by or ushered in by a blatant act of aggression* directed against this country in or near home territory; for example, an air raid on London or the sinking of a British ship off our shores. Such incidents as these would undoubtedly rouse the country, but as has already been remarked, the will of the people is neither trained nor prepared for such a contingency.

(*e*) Finally, there is the ever-increasing number of individuals who, as we have seen, will take no part in any war, whatever the cause.

The inspiration a man derives from the cause he is prepared to support is the principal ingredient of his "will to war." If he has no special interest or faith in the justice of a particular cause he will be very reluctant to fight for it. For example, the ordinary British patriot would strongly resent being dragged into the type of war visualized in (*a*) and (*b*). Similarly, a communist would have little heart in a war which in his estimation savoured of British imperialism. It seems unquestionable, therefore, that in order to produce the hundred per cent. "will" which modern war conditions postulate, the cause must be accepted by the vast majority of the country.

It is probable that the cause outlined in (*c*) above is the only possible basis on which such unity could be achieved. Although until 1914 the defence of British interests did not involve the whole nation, that spirit formed the corner stone on which the British Empire built up its greatness. In spite of the disintegrating influences which have attacked and weakened it during recent years, this spirit is still in varying degrees engrained in the hearts of the majority of the British. But even most of these patriots would require the stimulating but tardy incentive of an overt act of war such as was described in (*d*) above to reawaken it. The restoration of British interests to their proper perspective in the eyes of the British people, which implies a willingness to defend them in war, would, therefore, appear to be a necessary prelude to the development in peace-time of the writer's definition of a national "will to war."

Conclusion

An attempt has been made in the limited space available to examine a number of factors which are prejudicial to the nation's preparedness for war. The contention that these factors are in evidence in the normal work-a-day life of the nation is hardly open to dispute. On the other hand, opinions of readers may differ considerably as regards the degree

of significance which the writer attaches to them ; but, he is not prepared to yield one inch in his conviction that, should the country become involved in a major war in the immediate future, it would, for the reasons stated, have to fight under difficulties on the home front of a serious and possibly disastrous nature.

Many readers may be to a certain extent in agreement with this conviction and yet pin their faith on the certainty that the old British spirit will reassert itself before Armageddon arrives. They will draw attention to the recent improvement in defence consciousness which they maintain is an indication that British citizens are progressively appreciating that the State requires more than mere tacit approval of its rearmament policy. This tendency, they may maintain, will by its own momentum reduce to insignificance the various disintegrating influences which have been considered. Admittedly, following a long and disastrous slump in defence consciousness, the dangers of the current international situation have given rise to a " bull " market in which many hundred thousand citizens are playing their part. Propaganda has given much prominence to these satisfactory features but little is heard of the many millions who are either unconcerned or antipathetic. In any case, in view of our traditional attitude towards military matters in peace-time, is it probable that a boom in defence consciousness would be of more than temporary duration ? As we saw in the early part of this article, history demonstrates that such " will to war " as ever developes in a time of crisis fades speedily when the dangers are no longer apparent. If the present dangers pass away, then, according to precedent, the traditional " bear " market in defence consciousness will set in and will continue until the next crisis arises. In other words, the " will to war " of the British moves in barometrical fashion according to the pressure exercised by the international situation. The dangerous potentialities of this tendency under modern conditions of war need no further emphasis.

Taking a long view, even if the immediate problems which have prompted our rearmament are solved, the prophetic eye can see looming up on the far horizon a number of other potential menaces to Western civilization. The cold hard fact remains that although the application of science to war has filled some peoples with bitter loathing and horror of it, it has at the same time provided those nations which are less peacefully inclined with devastating means wherewith to impose their will. Until these threats to civilization are removed and the whole spirit of the world changes, the peaceful nation which wishes to survive is condemned to adopt the status of " a military nation " with its natural corollary of a unified " will to war " on the part of its people.

In conclusion, therefore, it is suggested that for the reasons which have been outlined in this article, the true " will to war " will never be achieved, let alone sustained in peace-time, under a purely voluntary system. Some form of war organization of man power in peace-time alone will bring home to the bulk of the British people, not only a better understanding of their obligations, but also a clearer conception of those qualities which are required to inspire the defence of the Empire under modern conditions of war.

DEFENCE AND DEFEAT

By Colonel R. H. Beadon, C.B.E., *p.s.c.*

IT is, and has been, a common gibe against " the powers-that-be " in every army, and not the least in our own, that preparations for the next war are based on the hypothesis that conditions will be similar to those pertaining to the last one, and when this notion is circulated by writers who enjoy the privilege of being able to catch the public eye, readers unversed in the study of war are liable to accept it as profound wisdom. Now the gibe in question must either be based on the assumption that no one can envisage the circumstances and conditions of a future struggle, or that so dull and unimaginative are the professionals that they alone are unable to perceive what is crystal clear to their critics. Speculation is, of course, to be welcomed, for the nearer we " guess " or estimate aright, the more hopeful will be our prospects of success ; but speculation, if it is to have prospective value, must be founded on such military knowledge as will enable elementary pitfalls to be avoided, a sense of the practical, and an impartial appreciation of what past experience has to show. Failing these qualifications, it becomes mere theory spinning, often indeed based on plausible clichés which, although having the semblance of being apposite to those lacking the inclination or training to reason them out, are easily detectable as fallacious by the professional mind.

History exemplifies the fact that nations have not infrequently been led astray by the influence of theories propounded either for the sake of originality and the advertisement that they bring, or because their sponsors react against established lines of national thought and imagine they can guide it into new channels. But in these respects our Anglo-Saxon phlegm has, on the whole, stood in our favour. Suspicious of doctrines and dogmas, we have tended to face problems and situations as they arose without being tied to rigid methods. If this characteristic has certain disadvantages of planlessness, it has nevertheless the advantages of adaptability and of that elasticity which is the most marked feature in inter-Imperial relations. We should do well, therefore, to think hard before we jettison so practical a tradition in favour of theories which, in so far as they buttress themselves upon history, only do so upon a distortion of it.

The Cult of the Defensive

Among the latter is what may be defined as " the cult of the defensive " in war. This, by a strange inconsistency on the part of the " prophets," seems to be wholly based on selected operations of the last great struggle rather than upon any seer-like vision which might serve to guide us in the next, and which moreover ignores those experiences which might militate against its ideology. This " school " of criticism—the term is a flattering one—essays to instruct us that the military offensive will be outside our interests and our competence in such future major warfare as we are likely to be engaged ; and that, therefore, we must abjure all idea of a military effort on the Continent comparable to that in which we were involved between 1914 and 1918, even limiting the tactical training of our Army to the defensive. The naivety of this is so reminiscent of the immortal D'Ordel that it would at first thought seem to provoke risibility, although the jest might well be considered of indifferent taste. Yet, in fact, the matter is none for laughter, for so potent is the power of the written word in an age of newspaper readers that almost any absurdity if sufficiently propagated can obtain a wide measure of credence, and democratic governments are bound to take note of what the masses say, rather than what the wise know. It is an established maxim in the advertising world that if a statement is made sufficiently emphatically and sufficiently often, the majority of people will believe it. It is, however, certain that such extravaganza could not make its appearance among the peoples of continental Europe, militarily instructed by hard experience as they are.

The main aspects that lie in the moral, the strategical (which is inevitably entangled with the political), and the tactical spheres will now be shortly examined. The initiation of an aggressive war by Britain is inconceivable : we are peaceable ; we are satisfied ; and we covet no man's possessions. Thus we are a defensive as opposed to an offensive Power. But there is all the difference between the initiation of an aggressive war and the waging of a strategical offensive in a defensive war, such as was the last one, in the judgment of the world for the Allies, who thus enjoyed the immense moral strength derived from that fact. Yet if Germany was the aggressor in 1914, she only remained so in the wider military sense until her failure on the Marne, following which she was in the position of a besieged fortress from which she was for long able to effect deep and powerful sallies which enlarged its perimeter. But that was all, and after the collapse of the last great sally the fortress was in the end bound to capitulate.

Can the preservation of law and order be imagined if the police were confined to beating off the attempts of a burglar or assassin ? Would

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History exemplifies the fact that nations have not infrequently been led astray by the influence of theories propounded either for the sake of originality and the advertisement that they bring, or because their sponsors react against established lines of national thought and imagine they can guide it into new channels. But in these respects our Anglo-Saxon phlegm has, on the whole, stood in our favour. Suspicious of doctrines and dogmas, we have tended to face problems and situations as they arose without being tied to rigid methods. If this characteristic has certain disadvantages of planlessness, it has nevertheless the advantages of adaptability and of that elasticity which is the most marked feature in inter-Imperial relations. We should do well, therefore, to think hard before we jettison so practical a tradition in favour of theories which, in so far as they buttress themselves upon history, only do so upon a distortion of it.

The Cult of the Defensive

Among the latter is what may be defined as " the cult of the defensive " in war. This, by a strange inconsistency on the part of the " prophets," seems to be wholly based on selected operations of the last great struggle rather than upon any seer-like vision which might serve to guide us in the next, and which moreover ignores those experiences which might militate against its ideology. This " school " of criticism—the term is a flattering one—essays to instruct us that the military offensive will be outside our interests and our competence in such future major warfare as we are likely to be engaged ; and that, therefore, we must abjure all idea of a military effort on the Continent comparable to that in which we were involved between 1914 and 1918, even limiting the tactical training of our Army to the defensive. The naivety of this is so reminiscent of the immortal D'Ordel that it would at first thought seem to provoke risibility, although the jest might well be considered of indifferent taste. Yet, in fact, the matter is none for laughter, for so potent is the power of the written word in an age of newspaper readers that almost any absurdity if sufficiently propagated can obtain a wide measure of credence, and democratic governments are bound to take note of what the masses say, rather than what the wise know. It is an established maxim in the advertising world that if a statement is made sufficiently emphatically and sufficiently often, the majority of people will believe it. It is, however, certain that such extravaganza could not make its appearance among the peoples of continental Europe, militarily instructed by hard experience as they are.

The main aspects that lie in the moral, the strategical (which is inevitably entangled with the political), and the tactical spheres will now be shortly examined. The initiation of an aggressive war by Britain is inconceivable : we are peaceable ; we are satisfied ; and we covet no man's possessions. Thus we are a defensive as opposed to an offensive Power. But there is all the difference between the initiation of an aggressive war and the waging of a strategical offensive in a defensive war, such as was the last one, in the judgment of the world for the Allies, who thus enjoyed the immense moral strength derived from that fact. Yet if Germany was the aggressor in 1914, she only remained so in the wider military sense until her failure on the Marne, following which she was in the position of a besieged fortress from which she was for long able to effect deep and powerful sallies which enlarged its perimeter. But that was all, and after the collapse of the last great sally the fortress was in the end bound to capitulate.

Can the preservation of law and order be imagined if the police were confined to beating off the attempts of a burglar or assassin ? Would

the policeman be dubbed aggressive if he pursued and arrested a criminal? Yet, it is now contended that the nation " would not stand " such punishment as was incurred in certain phases of the late war ; and it will therefore be reassured to learn that on any future occasion it will not be called upon for the effort and sacrifice imposed upon it between 1914–18. It is true, indeed, that a more scientific approach to the problem of breaking the enemy resistance should be anticipated and striven for. But let there be no mistake about it, the whole nation—and not only its young manhood—must needs be prepared to stand a great deal more than was involved by the slaughter of the Somme and of Passchendaele, in the mud of which latter one newspaper critic has declared " has been sunk the faith that created the Empire " ! A people that declines to make any or every sacrifice for its existence deserves the defeat which must sooner or later inevitably be its lot. It would be more logical and certainly cheaper to adopt the extreme pacifist attitude and foreswear war under any provocation than to contemplate meeting " totalitarian war " with theories of " limited liability " and such like sophistries, as if war was a sort of game which we refused to play under the new code because it demanded too much of us. The new code does, indeed, demand everything of us, and it is futile to essay to lay down its rules because there cannot be any. Yet we are now advised to declare in advance that we shall limit our aid to a Continental ally to definite spheres, and that our Army should not be trained for offensive operations. In other words, we are told to find the solution of our problem by running away from it or by pretending it does not exist.

What policy could be better calculated to encourage an aggressor than one which brazenly asserts that in the event of war we will be unwilling to throw all our resources into the struggle. It is still debatable as to whether the World War could not have been averted if our purpose of intervention had been unambiguous from the start and if Germany had known that she would have to face the whole strength of the British Empire. Yet, *a propos* of the present situation, one writer has gone so far as to affirm that the concurrence of our probable allies with our " limited liability " delusion—for it cannot be called a doctrine—" would not be difficult to obtain." What ally could we secure or keep on the basis that he should fight " all out " while we should take just as much or as little of the war as seemed good to us ? Hostile propaganda has often concentrated on such supposed British tendency. In fact it has not always been " supposed " for as, Dr. Seton Watson emphasises (quoting Professor Holland Rose) in his fundamental work, *Britain in Europe*, our policy in the days of Pitt of encouraging allies by subsidies to do the serious fighting while we confined ourselves to a limited liability on land and unlimited acquisitions at sea, had very grave repercussions,

and that was in days when our island itself was secure from attack. The same author also establishes beyond contradiction that isolation from Europe has rightly never been a principle nor an interest of British statesmanship. How much more true is this under modern conditions !

Traditional British Strategy

But to support the theory that British interests can be defended and British wrongs righted by other than British hands, we are instructed that such is the British way in warfare—such is our traditional and historic strategy. Had this been so it would have been by a cunning savouring of legerdemain that we should have been able to have built up a vast Empire, much less to have retained it as we have up to now successfully done with the significant exception of the American colonies. The loss of the latter, be it noted, followed close on the heels of the Pitt subsidy policy referred to above, as the consequence of which we found ourselves friendless and distrusted. In any case we should deserve to lose what has been called " the Second British Empire " if we were to rely on jugglery to hold it. For to use Lincoln's aphorism, " you cannot fool all the people all the time." The truth is, however, that we have never eschewed any ways or means of warfare which seemed to respond to the situation. In other words, we have been common-sense realists, and in so being have naturally taken full advantage of our sea power. Yet no Army in the world has had such a catholic experience of war as ours, just as no Army has been less tied to the defence of its own home-land. It has, it appears, now been discovered that the defensive—strategical and tactical—is most suited to our national characteristics !

It has been observed by a commentator of this " school " that, if war came in which we were allied to France—a contingency which must be envisaged—it is doubtful whether France would be attacked by Germany and also whether she, herself, would assail German territory, for " even a Continental war will take on an entirely different character from the last." It may indeed, for in such instance we shall be able to confirm the prescience of D'Ordel in legislating for the position to be adopted " when two stationary forces meet," which he laid down as that in which they happened to be ! It would, however, be a gentlemanly war that excused powerful rival fighting machines from participation ; and a convenient one for us in that Germany is to refrain from using her strongest weapon. Alas, we are outside the era of " gentleman's wars " ! Dr. Seton-Watson does well to express one of the most important lessons of the Great War by saying : " If we are right in regarding sea-power as the key to victory it is none the less true that the extension of German land power will be the prelude to a fresh attempt to challenge our security on the sea." That unpleasant truism needs digestion.

The French Task

In the event of a new Franco-German struggle, France would inevitably have to make use of her Manginot line, in the defence of which we might as allies be needed to co-operate. But it is indisputable that even the successful defence of that great system would not suffice to beat Germany. A counter-offensive with some ultimately decisive objective would have to follow, and its prospects would depend largely on the amount of assistance we could give it. Is it conceivable that our Army should remain doggedly ensconced in the concrete works of the Manginot line at the crisis of the struggle on the plea that it did not like offensives and was not, therefore, trained for them? Is it not with a sense of embarrassment that we read of the sulky and hesitating acquiescence with which Sir John French responded to Joffre's impassioned appeal that he should play a part in the magnificent plan that led on the Marne to one of the decisive victories of the world? Our action there may or may not have tilted the scales, but it is at least the view of posterity that it did. Moreover the cost to ourselves, to whom the result was as vital as it was to France, was insignificant. Yet we were not far from making "a great refusal."

As matters are to-day the Manginot line serves the dual purpose of demonstrating to the world at large and to the French people in particular the determination of France to protect herself and of enabling troops to be economized for a counterstroke. Thus its first purpose is moral, and the second military. *If it is our interest to be allied to France in a war against Germany, it is our necessity to support her sufficiently to ensure victory.* That support may or may not involve the use of all our strength on land, sea, or in the air; but if the employment of our whole military strength on the Continent is needed to win—it was last time—then that liability must be accepted and implemented. It is wisdom to accept an unpalatable situation if the alternative is worse. First things must come first, and the first thing is to win and not quibble as to whether our action harmonizes or not with "an historic theory." And we can at least extract some comfort from the fact that we can defend the soil of England without actually having to fight on it.

The British Role

It is beyond the present argument to attempt to define the military strength we should aim at having immediately available—our Army problem must be always a complex one—or in what manner it could be developed in the case of hostilities. An Expeditionary Force might be something in the nature of the highly trained and mechanized six Divisions with twelve Territorial Divisions, also mechanized, behind it,

described in the recent Gold Medal Essay of the Royal United Service Institution.[1] These would form a compact, very hard hitting and mobile reinforcement, the power of which could not be assessed merely by its numbers of men, although it may be observed that the cost of such "new model" has been adjudged prohibitive. Still we should be wise to put quality before quantity always remembering that quality alone cannot prevail against a combination of the two. As to expense, it is obvious that if the nation is unwilling to provide its man power freely it will have to pay for a privilege unique in Europe.

From the wider aspects, the present juncture would seem a singularly inappropriate one at which to inform possible Continental allies that they cannot in future expect full military support from us. Our frontiers may, as Lord Baldwin has said, be on the Rhine—though we might not unreasonably wish them still further distant—but anyhow they are frontiers the defence of which we design to leave to others. In face of a renascent Germany, and one, moreover, in close relations with Italy, the French Army has a far more difficult prospective role than heretofore. What an occasion to declare that we are quite ready to help it except on *terra firma*! There could be one, and only one result, of such *non possumus*, and that is that France, now the outpost zone of the western democracies, would be compelled to reshape her policy, even at the cost of humiliating terms with her mighty neighbour, and we should find ourselves in the outpost zone in her place. German aspirations would be well in sight of fulfilment and we should have merited no less.

But we are told that we cannot be tied and bound to French ambitions and forced to dance to a tune we have not piped. It is difficult to imagine greater confusion of thought. In the first place France has no ambitions except those of security and peace, and those are precisely our own aims; while in the second it is Germany, and not France, who pipes the tune. The answer is, therefore, that we are not, and never have been, tied to French projects or ambitions except by our own highest interests which furnish the best reason for being tied to anything. Our co-operation with the French Army in 1914 was the only way we could defeat the German Army, let alone prevent the overrunning of France—for no soldier will deem it other than grotesque to suppose that France by adopting a pure defensive from the start could have withstood the German shock. During that struggle one of the most hard-headed of American leaders was warned that the French would endeavour "to lead him by the nose." He replied: "I don't care a damn if they do as long as they lead me in the right direction."

[1] See JOURNAL for August, 1937, p. 463.

Tactical Training

In order to buttress what it is barely hyperbole to designate as the negation of strategy and the apotheosis of short-sighted selfishness, i.e., the "doctrine" that our existence can be defended by the "limited liability" principle, it is further affirmed that the tactical defensive being best suited to the British character, we should confine ourselves to training our Army for that alone. The two greatest defeats in our history have been those of Senlac in 1066, and St. Quentin in 1918; in both of these battles we were on the tactical defensive.[1] But let that pass, for it is not by citing such and such instances of victory or defeat on offensive or defensive that our methods and our native genius can be appraised and definite conclusions drawn. Such conclusions can only be adduced from surveying the whole field of our martial experience which, despite the miscalculations, set-backs, and blunders which are in the nature of human affairs, has patently shown itself to have been effective in its major purposes. Since it would be flying in the face of facts to deny the variety of experience we have enjoyed, it remains for those who claim that the defensive is, as a general proposition, more suited to our national character, to show a balance of success in such posture over that of the offensive and a balance of failure in the opposite case. That can, in my opinion, only be done by a distortion of history. It may be demonstrated that in certain circumstances or for certain periods the tactical (or strategical) defensive has best responded to our aims and has accordingly been adopted; but that is not to say that we have acted by dogma but merely with relevance to the situation as we found it.

Did Clive gain the Empire of India at Plassey or Wolfe the Dominion of Canada on the Heights of Abraham by what some are pleased to call the "traditional British methods"? Did our three greatest soldiers, Cromwell, Marlborough, and Wellington rely on such? How oddly then must Cromwell have interpreted them at Preston, at Dunbar, and at Worcester, in which campaigns he not only shattered but annihilated the enemy, although in the first two he was in markedly inferior numbers. Were Blenheim, Ramillies, and Oudenarde defensive battles? Verily, if victories by "traditional British methods" were the only ones to appear on our regimental colours, those colours would be despoiled indeed! The notion that Wellington was primarily a defensive General has so long been exploded that it is redundant to emphasize it. Owing to his paucity of reliable troops and the special conditions obtaining in

[1] With reference to Senlac, however, there is not the slightest reason to believe that even had we foregone our rash counter attack we should have emerged victorious. At best, the Norman success would have been delayed.

Portugal and Spain, he was bound to fight many defensive actions, but the essential point is that he was able to adapt himself to circumstances and be content with a minor success when a major one was out of his grasp. That he did not miss the latter, when opportunity was given or made by him, is evidenced by the masterly fashion in which, passing from defence as an attitude of watchful expectancy, he dashed Marmont's army to pieces at Salamanca, and the triumphal outcome of his onset at Vittoria. Did he doubt—and few commanders have been sterner critics of their troops—the offensive spirit and ability of his men when he issued that confident order: "Badajoz must be stormed to-night." Badajoz, the strongest fortress in Spain!

The British Soldier

It is indeed a libel on the British soldier to assert that because he has so stubbornly defended himself with his back to the wall he is incapable of attacking and overthrowing a redoubtable enemy. One may wonder whether the Scotch and Irish elements, which have always been strongly represented in the British Army, are included in this judgment or whether the latter is to be held as specially applicable to the more stolid Englishman. But Cromwell's troops, recruited from the peasants and yeomen of East Anglia, have alone done more than enough to give the lie to the imputation that Englishmen are inapt for offensive war. If Turenne had entertained any such misapprehensions, he must have been enlightened when he saw a brigade of Cromwellian infantry attack and drive in headlong rout before it a superior force of the famous Spanish foot from the Dunes outside Dunkirk. One is, on reflection, fain to believe that so absurd a theory as the one in question can only serve the purpose of destroying our self-confidence; and dangerous as self-confidence may be, it is never so dangerous as the lack of it. At any rate that theory was not held by Foch who, in the course of a discussion on the military characteristics of various nations, remarked, "there is nothing that the British soldier cannot do."

So much for our past inheritance. Are we to think that it will have been wholly dissipated if we are so unfortunate as to find ourselves engaged in a future struggle? Apparently so, for based on a mathematical formula that a superiority of three to one in men is required to make an effective offensive in modern war, we are reminded that since such superiority is outside our possible vision, the offensive is necessarily ruled out; and that, therefore, we must confine ourselves to the training of our Army for the tactical defence. What a simple and logical solution to our perplexities! But what a confession of mental bankruptcy!

A German Offensive

To begin with this numerical ratio is based upon the operations of siege warfare which for some four years dominated the fighting on the Western front—a situation which may or may not obtain again, for it is at least arguable that a future struggle may differ from the last and be short, sharp and decisive. It is, indeed, odd that critics who accuse the professional mind of considering the next possible war in terms of the last are actually guilty of what they denounce in others. There may be no stabilization in the next land campaign and opportunities may arise for the art of the General. Skilful leadership and high morale have played a more decisive part in war than have numbers. But leaving aside such conjecture, the fact is that the figures in question are not uniformly true of the late war for, with approximately equal numbers and despite an inferiority in material resources in the theatre of operations, the Germans did succeed in a break-through which, however we may console ourselves now, was not far from being decisive and probably would have been had they possessed even a twenty-five per cent. general superiority. Nor was this feat achieved against armies of low morale. It was achieved because the enemy grasped the initiative and was, therefore, able to concentrate overwhelming force locally against the actual point of attack. That, of course, is elementary. But it is important to remember also that the measure of the German success was mainly due to the skill of their troops in the tactical offensive—a skill that we had failed to attain in our many attempts to effect a rupture of the German front. It may be objected that there was nothing unskilful about our offensives except that the German defence proved too strong for them; but it may be imagined that exponents of our defensive qualifications would hardly dare to use an argument that, even in that special field, the Germans excelled us.

Yet while admitting that the late war exemplified the formidable difficulties of the attack, it may still be asked is that sufficient reason for us to throw up our hands in despair and renounce the problem as insoluble? It would, indeed, be unnecessary to solve it if every potential antagonist was of the same opinion, in which case we could look forward to the millenium of peace. Wars cannot take place unless someone attacks someone else, and if no army attacked any other there would be no land warfare. How reassuring to think that the huge "totalitarian" armies would be so obliging! What on earth, literally and metaphorically, is their purpose? It is reasonable to suppose that they are for use, and if this is so, then surely it must be their intention to seek the solution of the offensive problem. We British are, apparently, to spare ourselves the trouble and to sit about either within or without

their reach—preferably the latter—awaiting their pleasure as to when and where the blow will fall. *But the defence itself is emasculated if the ability and the will to attack is not inherent in it.* We should be in the position of a boxer dragged unwillingly into the ring and therefore determined to limit himself to warding off the blows of his opponent. By such tactics he cannot win and the odds are heavily on his defeat, for it is impossible to cover everything by a timeless defence through which, sooner or later, a way will be found.

Future Developments

Why indeed should it be considered as axiomatic that because the late war showed that modern weapons gave a preponderating power to the defence such conditions must necessarily continue to obtain and become more marked? The whole history of the progress of man goes to prove that his inventive genius is continually being countered or succeeded by fresh discoveries. Is not necessity the mother of invention? Is it, then, inconceivable that ways and means of redressing the present balance cannot be found? The Russians have already developed the formidable weapon of propaganda as an attack on morale in a fashion quite outside our ken a generation ago, and with respect to material weapons is it not paradoxical that we should admit our helplessness in an age when science has, in the Air arm, produced the most destructive *offensive* weapon—and that purely offensive—of all time. It may even be that ground forces will be more exposed to destruction by "staying put" than they would be on the move. What sort of a showing would our long-service professional soldiers make under such circumstances if their training had been limited to the tactical defensive whereas the short service conscripts who opposed them had been trained for both attack and defence? But what sort of a showing, anyhow, would a one-sidedly trained army make against one more adequately instructed? Again, why should it be assumed that the weight of numbers will be always against us? We may well with our allies possess even that superiority which ultimately we achieved in the late war. Supposing this were so and our coalition favourably inclined or placed for the offensive, must we still "stand out" or "wait and see" after the manner of some ancient tyrant who forced his satellites to taste his food before dining himself? But we are warned that a great land campaign on the Continent is bound to subtract from any force we can exert on the sea or in the air—"a point that soldiers are apt to avoid." To assist their perception another mathematical formula is supplied. It is that "if the sum total of our power to create and apply force be divided by three, the result cannot be the same as if the sum were undivided." Was there ever so abysmal a misapprehension of the science or the art

of war? Why not then confine ourselves to naval action and not divide our force at all; or to air action only for the same reason? One might as well assert that because an infantryman has a rifle, a bayonet and a bomb, his power of using only one is divided by three, or alternatively that his total power to apply force is divided by three, although common sense tells us it is tripled.

Our power to apply force lies in three elements each complementary to the other and of which one or more may be required at its own maximum effort to enable a favourable decision to be reached. The pre-war adjustment of our resources between the three is not easy to determine, but war will soon disclose in which element or elements the weightiest efforts of which we are capable are demanded. Mathematical formulæ will not help.

Let us therefore face facts and eschew ostrich-like postures which can but serve to confuse our own people, dismay our possible allies, and incur the laughter and contempt of our possible enemies.

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MESS SILVER AND TROPHIES OF THE 2nd BATTALION
THE ROYAL INNISKILLING FUSILIERS

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ARMY RECRUITING

By MAJOR-GENERAL M. G. H. BARKER, C.B., D.S.O.,
Director of Recruiting and Organization.

On Wednesday, 24th November, 1937, at 3 p.m.

The RT. HON. LESLIE HORE-BELISHA, M.P., Secretary of State for War, in the Chair.

THE CHAIRMAN, in introducing the Lecturer, said: There has been an assumption that it is impossible to get recruits. Fortunately that assumption has been undermined by recent facts. There have been certain modifications, not in physical standards but in medical standards; for instance a recruit who was previously allowed two false teeth is now allowed thirty-two! He is supplied at the Government's expense with a set of false teeth. I do not admit that this is an undermining of medical standards; it is simply an approximation to common sense, for we all know that the healthiest and sanest people in the community have false teeth. We have made certain modifications of that kind. We have made it possible, for instance, for an officer or a man who was previously allowed to wear glasses to have his eyes tested with the glasses on rather than with the glasses off. Those are not subtractions from the physical standard; they do not touch the physique at all.

Apart from these modifications, there has been a considerable substantive increase in recruiting for the first time for some long period, and the main reason is that there is a change in psychology. If you believe, as I believe, that the military career is the best career that is offered to young men to-day, and if you convince the whole public that the Army is a good institution, then we shall get recruits. In other words, if people would cease—as I think they are ceasing—to tell the community why men do not join the Army and would tell the community why men do join the Army, then our recruiting problem would be solved. I think it is on the road to solution, although there is much ground yet to be covered.

In the improvement of recruiting General Barker, as Director of Recruiting, plays a leading part.

LECTURE.

FOR the past hundred years, recruiting has had its ups and downs continuously and has been constantly in need of fresh impetus. Because this necessity for fresh impetus is not generally apparent until deceleration becomes marked and unmistakable, a time lag always intervenes causing these significant ups and downs. The situation during the Crimean War was so serious that in May, 1855, recruiting for Swiss and Germans was opened. By 31st March, 1856, about 10,000 had been enlisted, of whom nearly 4,000 were actually sent to the

Crimea. A recruiting office was opened at Turin and by March, 1856, 3,000 Italians had been enlisted and sent to Malta. Another recruiting office was opened at Niagara and a certain number of American citizens were enlisted. None of the Swiss and Germans who reached the Crimea went into action and none of the Italians or Americans even so far as the Crimea.

The drop in recruiting in the early Sixties, following the disturbed periods of the Crimean War and Indian Mutiny, led to the assembly of two Royal Commissions within the short space of five years. The first sat in 1861 and the report shows that, although authority was given in 1857, in consequence of the Indian Mutiny, to raise an additional 65,000 men and although the bounty had been increased and the standard, lowered to such an extent as to bring boys instead of men into the ranks the strength of the Army was nevertheless below establishment. It is interesting to note the following observations upon which certain recommendations were based :—

(*a*) We are not prepared to recommend an increase of pay to the Army, but we believe that the charges and stoppages do press heavily on the soldier.

(*b*) We trust that the improvements which have from time to time been carried into effect in many barracks be gradually extended to all.

(*c*) It might also be a great encouragement to recruiting if a preference were given to pensioners in following up such situations as porters and messengers in public offices and appointments in the Excise, Customs, Post Office and other civil departments.

(*d*) We recommend that a fair and full statement of the conditions and advantages attaching to service in the Army be drawn up and published in the shape of a small pamphlet for general circulation in the country.

The 1866 Royal Commission gives us a few further interesting facts :—

(*a*) We think that the deficiency may be traced to causes which, for the most part, admit of remedies being applied.

(*b*) A constant outflow through migration, the great demand in labour and consequent rise in wages form, no doubt, an obstacle to recruiting at the present time.

(*c*) We would suggest that soldiers be taught industrial trades.

(*d*) As a peace establishment and having in view nothing more than the proper provision of that military protection which we are bound to afford to our Indian territories and our extended Colonial possessions, the Army as at present is

barely sufficient for this purpose. One, and not the least, cause of its unpopularity as a service arises from the fact that the soldier must spend two-thirds of his time in a state of expatriation.

From these extracts it is clear that many of the remedies advocated seventy years ago are those which are advocated to-day. I trust that this brief description of the past will prove to you that the problem we have got to face to-day is exactly the same problem as has been faced in the past.

A COMPARISON WITH OTHER COUNTRIES

I have been at some pains to endeavour to draw a parallel to our situation and that of other countries. I must confess that I have been defeated in my effort. Unless we go back as far as the Roman Empire we get no real parallel between our conditions and those of other countries. As our Empire is so large and so wide-flung as compared with any other nation, their problem can be solved far more simply than ours. It might be of interest to note, however, that in both the French and Italian armies there is a serious shortage of long-service N.C.Os and both armies have recently had to improve the conditions of service both as regards pay and privileges in order to try and attract increased numbers. As regards long-service Colonial troops: the Germans before the war offered bonuses (service in the Colonies counting double for pension), special and increased pensions and special privileges to their long-service White Colonial troops. To-day the French and Italians both offer a very greatly increased rate of pay, periodical bonuses and increased privileges to their long-service White volunteers.

THE LAST FEW YEARS

I now come to the more modern times and I would, for a moment, ask you to concentrate on the last few years of recruiting. The large increase in 1931 was due mainly to the gloomy industrial situation of the country, lack of work, and unemployment. This intake of recruits gradually declined as industry improved until we came to our last year's figure of 22,302. Now I want for a moment to examine this situation in rather more detail. I would remind you of the increase in the intake into the Royal Air Force which makes a direct reduction in Army figures.[1]

If we merely add half of the annual R.A.F. intake which is, I suggest, a low figure, it will be seen that in the past years we have taken what

[1] The figures for the other Services from 1st April, 1936, to 31st March, 1937, were :—

Royal Navy.—7,768 men, 3,740 boys.
Royal Air Force.—8,413 men, 602 boys.

may be regarded as an average number of recruits. The situation to-day, I think, must be regarded rather in the light of the fact that we are taking as many recruits as we can expect under modern conditions and I deprecate any view which suggests that there is something radically wrong with the men of the day who do not come forward to join the Army. When we consider the immense improvement in employment and the increase in wages in many trades, I consider it is surprising we get as many recruits to-day as we do. The situation is definitely serious, but that serious situation is due more to the increased demands of the Army than to the reduction of recruits coming forward. It is quite clear to us that we have not got and are not getting sufficient recruits, and it is quite clear that we cannot expect the number we require without additional inducements to young men of the country.

FACTORS INFLUENCING ENLISTMENT

Now next I would like to consider the reasons why a young man does not enlist and the reasons why he does. It would appear that the objections to the profession of arms fall under two headings—psychological and material.

Psychological.—Under this heading we should include :—

(i) Restrictions of the life of discipline.
(ii) The low social status of the soldier.
(iii) Separation from home and family.
(iv) Reluctance to give a pledge for seven years without power to break it.

Material.—Under this heading we may include :—

(i) Poor pay.
(ii) Lack of prospects after service.
(iii) Prolonged service overseas.
(iv) Marriage restrictions.

In addition to these psychological and material reasons we must include certain influences which react adversely on recruiting :—

Home influence.—Adverse home influence is usually engendered in the female element on account of war risks and loss of financial assistance after enlistment.

Pacifist propaganda.—I shall deal with the alleged effects of pacifist propaganda later.

Now to consider for a moment the reasons for enlistment. I suggest :

(i) Family tradition.
(ii) The desire to serve with a relative or friend.

(iii) The attraction of a healthy outdoor life.
(iv) The spirit of adventure.
(v) The glamour and pageantry of tattoos, parades, etc.
(vi) Unemployment.
(vii) The tedium of civil employment.
(viii) Family troubles.
(ix) Social troubles.

Now I should like for a moment to consider the palliatives for the objections to Army life and encouragement of the reasons for enlistment and some of the difficulties with which we are faced in implementing such means. You will have noticed lately certain modifications in our system of discipline, giving a man more freedom and, we hope to some extent, removing the disciplinary objection to Army life.

INCREASE OF PAY

This is a difficult matter for me to discuss to-day because, as you will realise, a question of increase of pay is a matter in which I can do nothing except put forward a case. I feel certain that I do not err in saying that it has been and is being most closely considered and that the Secretary of State and the Army Council have this matter very much at heart. I would, however, remind you that there are difficulties in the path. An increase in the basic rate must obviously have repercussions, not only on the two other Services, but also on all Government Services. We recently had a case of the rise in the basic wages for farm labourers in the North of England and Sussex due to a sudden increase in the number of recruits in these areas. Financial reactions within the country are, of course, entirely outside my sphere but I am assured, by those who know, that raising the basic rate would have serious repercussions within the country and would lead to a wage competition between the Army and industry in which the Army would, in the end, be bound to fail with an immense increased cost to the country and little or no permanent increase in recruits. I would make it quite clear that this is an opinion, which is outside my sphere, and I merely repeat it as being what I understand to be the considered opinion of those in the country whose business it is to study such subjects. An increase of pay within the Army not affecting the basic rate, to put it more on the lines of the Navy, is a different matter, and I am given to understand would not have the repercussions which I have just referred to.

TERMS OF SERVICE

We constantly see in the papers and hear discussed the question of reduction of terms of service and/or reduction in the tour abroad in

order to encourage intake of recruits. Such reductions, we are very well aware, might have considerable effect on recruiting, but here we are faced with a difficulty of another nature. I would remind you of certain fundamental facts regarding change of service or reduction of tour overseas :—

(i) Reduction of lengths of Colour service necessitates an increase in the intake of recruits.

(ii) The reduction of tour overseas necessitates increased drafts and, as a result, an increase in home peace establishments and both necessitate an increase in expenditure, partly on account of the increased establishment and partly owing to the increase of shipping.

To make my case a little clearer I would take for a moment the case of a regiment of Infantry of the Line. The approximate strength of a 2-battalion regiment, including the depot, is about 1,670.

The number of extended men can be taken as ..	270
The number of men in their first term of Colour service is	1,400
	1,670

Therefore, if the first term of Colour service is seven years, the run-out will be 1,400 divided by seven, that is to say, 200 men, so that at least 200 recruits will be required each year. If the term of Colour service were changed to five years, the minimum number of recruits required is 1,400 divided by five, i.e. 280, eighty more than in the case of the seven years enlistment. The problem is not so simple, however. Reduction in the length of Colour service from seven to five will mean a double run-out in the fifth and sixth years following the change. Therefore, in the fifth and sixth years the run-out will be at least 480, which will dislocate the home battalion and will necessitate an intake of 480 recruits in those years. Certain arrangements, such as premature transfer to the Reserve and extensions for bounty will ease the situation by smoothing over these peak periods but, even so, the intake of recruits will have to be largely increased and establishments of battalions also. The point I want to make clear is that these very desirable changes in conditions can only be brought about if and when a larger number of recruits become available.

LONG AND SHORT-SERVICE ARMIES

You will often hear it suggested that a complete change of our system is most desirable, and one of the commonest proposals is that

we should have a long-service army abroad and a short-service army, which would produce a strong reserve, at home. These proposals would lead to very grave difficulties. The long-service battalions overseas would obviously necessitate great inducements being offered to the men. I would suggest to you that we could not hope to get men to serve in India for twenty years unless we give them the same pay as is given in the Colonial Forces, namely, 35s. a week—many people would put it higher. This would be an immense increase in the cost of the Army—I believe about £12,000,000—and this cost would have to be borne by India. You may say that that is a matter which must be faced by the public, but there is an even more serious problem which we should have to face. You cannot expect men serving on long-term engagements to remain single all their lives and you must anticipate that a very large proportion of the men would desire to marry. Taking a reasonable age only, and after their first tour in India, we come to the surprising figure of at least 400 married men in each battalion with probably some 1,200 children. To those of you who have served in India I need not enlarge on the magnitude of the problem which would face a commanding officer, nor need I remind you of the other administrative difficulties which such a situation would produce. It would entail increase in hospital accommodation, the double accommodation for plains and hills, the necessity of home passages, the great difficulties of moving and the like, and I think you must agree that such a proposal would be impossible to carry out.

Regarding the suggestion of a short-service army at home, which has been placed by some people as low as two years, I would remind you that with a two-year enlistment it means a run-out of half the battalion each year and with our system of voluntary enlistment, which means the continual flow of men into units throughout the year, the battalions would, I think, become merely training units. It would be impossible to provide specialists and very doubtful whether the unit could mobilize on an efficient basis.

In listening to criticisms of recruiting, two points which I have previously referred to are often brought forward as one of the main arguments against the intake of recruits, namely, unemployment pay and pacifism.

Unemployment Pay.—Now, in the case of the former, it is our opinion that it has far less effect on the intake of recruits than is apparent from a cursory glance. We are constantly in touch with the labour market all over the kingdom, and inquiries made from our recruiting staffs invariably produce the answer that few, if any, of the men of recruitable age are suitable for the Army. It is an unfortunate fact

that the "dole" has produced or, if not produced, has brought into evidence that, in this country like most others, there is a proportion of men who are definitely unemployable and these men are of no more use to the Army than they are to civil life. Is it not a fact that the decent young man who finds himself out of employment does not turn to the Army as a profession?

The following information about unemployed men was given to me by recruiting officers in conversation or by letter:—

BIRMINGHAM.—About 200 men of military age on the register of whom fifty or sixty would be recruitable.

WOLVERHAMPTON.—No men on the register who would be acceptable as recruits.

BARROW-IN-FURNESS.—There are practically no men unemployed who are fit for the Army.

CARDIFF.—The unemployed men of military age are mostly unfit or undesirables. There has been a very large migration of young men from the mining valleys to employment near Bristol and in the Midlands.

GLASGOW.—There has been a very large drop in the number of unemployed of military age. Most of those who are unemployed now are men who have failed to keep jobs and are generally undesirable.

YORK.—Fourteen only of military age were unemployed and none were suitable for the Army.

I do not wish for one moment to suggest that these remarks apply to all the large number of unfortunate men who are out of work. An enormous number of them are older men who are only too anxious to find employment but they are no use to us, but of the young men I do feel that it is a most unfair criticism to suggest that the good young man of to-day prefers the "dole" to military employment; I do not believe he does.

Pacifism.—Again, I can merely express an opinion, but I would remind you that pacifist activities are chiefly employed amongst the class of man from which we do not draw our recruits. To say pacifist propaganda has had no effect on the Army would be foolish, but what I do contend is that its activities, being as they are mainly confined to a class from which we do not recruit, have had less effect than is generally supposed. I cannot prove my case, I can merely give it to you as an opinion.

EMPLOYMENT AFTER SERVICE

Employment after service is a problem with which I do not deal, but am vitally interested in so far as it affects recruiting. There is no doubt

that it is one of the greatest bars to joining the Army. We have, as you know, taken steps lately to increase the number of men who can be accepted for vocational training. Furthermore, men arriving home are now given a period in England before being passed to the Reserve. The employment question is one which is constantly being considered and all I can say at the moment is that changes may be looked for and an improvement in this respect anticipated.

The following note prepared for me by the Director of Personal Services may be of interest :—Vocational Training is concerned principally with the soldier on a short-service engagement who is not a tradesman. It is essential to give such a man a chance of skilled employment on leaving the Colours. Casual employment is both badly paid and intermittent. In consequence Vocational Training is now available for all such men. It is given during the last six months of their service whilst they are being paid as soldiers. At present it is given partly at three Army Centres—Aldershot, Chisledon and Hounslow, and partly at certain Government Training Centres under the Ministry of Labour, principally Southampton, Slough, Waddon (near Croydon), Handsworth (Birmingham) and Leeds.

Courses of training are given in the following main groups of trades :—

(*a*) All building trades.
(*b*) A considerable number of engineering trades.
(*c*) Various furniture trades.
(*d*) Coach-building trades.
(*e*) Agriculture.
(*f*) Certain employments suitable as part-time employments for the long-service man at the end of his service.

Special arrangements are made to place into employment men at the end of their courses and a very high percentage of employments has resulted, well over ninety per cent. Men are placed as " Improvers," but it has been found, in practice, that after the sound groundwork given then, they obtain a very satisfactory rate of wage after a few months. The Government Training Centres have already placed 50,000 men and the Army Centres 18,000. Records are kept of men placed so as to ensure that they continue in employment. It is not sufficient to place a man in a single job and consider that the responsibility for him is over.

RECRUITING ORGANIZATION

Now next I would deal very briefly with the present organization of our recruiting services. Up till a few years ago the organization left

much to be desired, and here I am not offering a criticism to my predecessors but would indicate that the present necessity has called for and insisted on an improvement in this direction. The present organization was started by my predecessor and was based on the territorial area organization. Starting at the War Office, we have a Director of Recruiting with a Staff. At each Command the work is carried out by a D.A.A.G working under the Major-General i/c Administration. In each territorial area we have a Chief Recruiting Officer who works as a staff officer to the Area Commander. Under these Chief Recruiting Officers we have Zone Recruiting Officers working in like manner as staff officers to Territorial Brigade Commanders. To make the chain complete, the recruiting responsibilities under the Territorial Brigade Commanders are carried out by Depot Commanders and Territorial Adjutants; thus we now have a complete chain from the War Office right down through the various Commands.

Publicity.—Again started by my predecessor, a Publicity Department was instituted last year under the Inspector of Recruiting and this, assisted by one of the publicity firms in the country, did most valuable work and was responsible for articles in the daily papers, broadcasts, news-reels, etc. Since our new Secretary of State took over, he, feeling the necessity for an enlargement of this department, has instituted a new Publicity Department which, under General Dawnay, has taken over the work we were doing in A.G. 10, and will considerably enlarge the scope of our publicity.

Intake of Reservists.—You will, of course, have noticed that during last year we opened the Army to the Reserve. This was done partly because we wanted the men back in the ranks and partly because the Secretary of State wanted to get a line on the desire of men, both in and who had left the Service, to make the Army a career. The actual number we have taken in amounts to some 2,200 and has proved "a very present help in time of trouble." The offer is still open, and I anticipate that the figure will reach some 3,000 before it is finally closed.

Change of Medical Standards.—Medical standards for entry into the Army are constantly under review, and this year we have altered the standard as regards teeth, eyes, and, to some extent, ears. I would remind those of you who may be critical of this action that the standard now is still higher than that we should adopt in the event of war, and I find it a little difficult to justify any objection to such action. After all, we recruit for war and not for peace. We have also introduced a method of accepting men of a lower standard by what is known as the Recruits Physical Development Depot. This moved to its final home at Canterbury some two months ago. We accept for this Depot men, or really

boys, who are under-weight, under-height or suffering from such debility as can be put right by improved food, conditions of living and special physical exercises. The results so far have been extraordinarily good, and I would advise anyone interested in such matters to pay a visit to this depot, and I feel certain that they would be astonished at the improvement which takes place in these boys during the three months which we keep them there. The total number we have taken during the past six months is 527 ; 295 have joined units, and 35 represent wastage. We have been in touch with the depot commanders to whom these recruits have subsequently been allotted and in almost every case reports have been most encouraging. It is quite common to hear that a recruit sent from a Physical Development Depot is above average in the squad in which he finds himself at his regimental depot, and I can assure you that we are firmly convinced that this method of accepting men who would otherwise be rejected from the Army, far from lowering the standard of the recruits has, if anything, improved it in many respects. This method of training has come to stay, and will, I feel certain, be developed still further in the future.

RECRUITMENT OF BOYS

The intake of a large number of boys into the Army is, at first sight, a most attractive method of abolishing the deficiencies, but I would remind you that there are certain snags about this. If we accept a boy at fifteen we have to keep him for four years before we can make full use of him and then we can only use him in the Colonial stations and have to keep him a further year before we can draft him to India. We cannot accept these boys on our present establishment as obviously they would count against the number of men required to find our overseas drafts. Therefore, they must be accepted as an increase of establishment with the very great increase of cost which would accrue. We are, however, considering certain measures, namely, a big increase in the number of boys accepted for training as artisans and an increase of some 1,500 into units with a view to training as clerks, signallers, motor drivers, etc.

PUBLIC OPINION

It is very difficult for me to give you any direct line where you can, as I feel sure you would, assist in the intake of recruits, but I would ask you, by your personal influence whenever possible, to induce the young men you may know to join, and would ask you, whenever you get the opportunity of public utterance, to bring home to your audience the importance of maintaining the Army at its required strength, and finally

I would ask you not to be unduly critical of our efforts and to realize that we are, all of us, endeavouring to tackle a most difficult job, anyhow with energy, with, I hope, an open mind and with a willingness to accept any suggestions which can improve the present situation. Lastly, I would like to assure you that I am not a pessimist. I am confident that we have seen our worst days. We have made improvements and with improved conditions in the Army I feel we should look forward to the future with reasonable optimism.

DISCUSSION

MAJOR-GENERAL SIR ALFRED KNOX: I should like to ask the Lecturer whether he thinks that it is possible, with the present rate of pay, to obtain the number of recruits that we require in the Army at the present time. His argument against raising the pay did not impress me, because the farmers to-day are robbed of a large number of their men for building aerodromes and making roads, and I do not think they would worry very much about recruiting for the Army. I should like to know whether the Lecturer really thinks that psychology would be sufficient to fill the Army, because I do not think it would.

THE LECTURER: I do not think it would be entirely sufficient. You will remember the last thing I said in my lecture was that " with improved conditions " we could hope to get an improvement in recruiting.

BRIGADIER-GENERAL S. E. MASSEY-LLOYD: In the old days the Militia was the backbone of the British Army but now, for some reason or other, the parrot cry is repeated: " The class of men who enlisted into the Militia does not now exist." I know that to be quite wrong. The same applies to the officer; he exists still but he will not join the Territorials.

I should like to know whether there is any possibility of the Militia being restored to its proper basis.

THE LECTURER: I would remind you that we have now got what we call the Supplementary Reserve into which a man can enlist on practically the same conditions as in the case of the Militia. I do not underrate the Militia: it produced, to my mind, better officers than any other force produced. I speak with certainty because I am one of them! But I do not think your case is very strong while all the Supplementary Reservists I can get in are 85 men a week.

The Adjutant-General started this scheme as a particular pet of his own, and we are getting about the number we expected; the Adjutant-General's calculation was 100 a week. We want 12,000, and we have not got anywhere near that number. When we have got 12,000 I think you will have a stronger case for the Militia.

LIEUTENANT-COLONEL C. E. PIERSON, D.S.O.: I cannot help feeling that there is a great deal in what the last speaker said. The Special Reserve battalion of 1914 was popular because it was a unit. A few boys go to the Depot now and are collected together, they have not the advantage of belonging to a unit. The latent patriotism in the Special Reserve should be brought into being again, as I believe it might be in the country districts.

With regard to the Regular Army, there are two things which I think might help recruiting. One is leave from abroad; men have been seven years abroad without seeing home, and I think a little assisted leave would be a great incentive

to recruiting. The other is that of civil employment. I know it is a difficult matter, but I wonder whether it is a good thing for a man to change his trade and whether employment could not be found for him in firms on the W.D. list connected with the manufacture of military equipment.

LIEUT.-GENERAL SIR O. C. BORRETT : I should like to ask what pressure is being brought to bear on the Secretary of State for India and the Secretary of State for the Colonies to bring the life of the British soldier in India and the Colonies up to the same standard as the life of the British soldier in England.

THE LECTURER : That is a matter between the Secretaries of State.

MAJOR-GENERAL SIR EDWARD CHAYTOR : There are many points in the excellent lecture with which I should like to deal, but I will confine myself to one which I am sure is one of the main reasons why many of the most desirable men do not join up. The type of men I refer to are the thinking men who have got jobs or can get them and who hope one day to marry and have a family and provide for them. Try to get into the mind of a man in that position ; many of them realize the great hardships in the late war ; although they were children then, they saw what their mothers and brothers and sisters went through. If a man is in the Territorials or a Reservist and war breaks out, he will be called up and be there for the duration, and we must expect that casualties will be very heavy. The Minister for Co-ordination of Defence has stated that we do not need a big Army, that our Continental ally will find that. The same thing was said before the late war, but our Continental ally suffered heavily and we had to extemporize a new Army while our Regular one was being wiped out. In many cases, early in the late war, the soldier in the field who thought that his wife and family were provided for, got letters from them saying they could not buy anything as prices had gone up so much. Men in civil employment, including men who could not be trusted to fight, were allowed to get wages eight or ten times what the man in the field got, and in many cases they were given an exemption so that they would not be conscripted. Many of the men who joined up received a promise from their employers that their jobs would be kept open for them ; but I was told by the head of a large establishment in Glasgow that, when the men began coming back in one's and two's the employees of the firm said : " If you dismiss one of our number to make room for these men, we will strike." The firm could not afford a strike, and the Government would take no action.

Every man who fails now through the effects of service should be provided for. In New Zealand any man who claims to be incapable of work or partly disabled through the effects of the War is sent before a local Board and given the benefit of any doubt and provision is made for him and his family if necessary. I know that members of the Cabinet and others in this country say that there is no money to do this, but if these men had not suffered there would be no money to squander on social services or anything else. These men deserve consideration.

GENERAL SIR B. DE LISLE : An old soldier with whom I was discussing this subject said the Army could not possibly compete with the industrial market. (The Lecturer said the same thing.) In his view our only hope lay in universal service. Every politician knows that the party which tried to bring that in would not last a week. But I suggest that there should be universal service for boys in Government and Municipal employ. If they were all enlisted at the age of eighteen and had to serve for three years there would be no difficulty about recruits, although the difficulty about foreign service would still remain. I am quite certain that a large proportion of these boys would extend their service to seven years if an Act were passed that at the end of that time they would have first claim on Government

and Municipal employment. That may or may not be a solution of the problem, but I offer it as a possible one.

LIEUTENANT-COLONEL E. G. S. TROTTER: suggested that something should be done socially for the British soldier in India.

COLONEL T. A. H. DAVIES: I should like to ask whether the eight years abroad if a man serves in India is definitely done away with. I ask the question because I was at a recruiting office the other day and I saw that he still signed on for it.

THE LECTURER: The holding has not been abolished, but it has been removed. Men are not being held now to serve for the extra year in India, but it would be a dangerous thing to abolish the right to hold, because we might need to put it into force in the case of a national emergency, such as a war on the Frontier.

THE CHAIRMAN:

I do not think we can exaggerate the importance and interest of this lecture. It is important not only because of the status of the Lecturer and the competence and knowledge of his subject which he has displayed, but also because of the audience which has listened to it. In this room are numbers of ladies and gentlemen who can influence, for good or for evil, the status which the Army occupies in the public esteem. We recall that the Lecturer said that one of the factors to be taken into account in considering why people did not join the Army was the status of the Army or the place which it occupied in the public esteem.

We all know that there are many improvements which can and ought to be made in Army life. Some of them cost money. Some of them cost no money and are merely a question of attitude. There is, however, as everyone realizes, a limit to the amount of money which can be spent on any particular Service and, if we advance certain matters too rapidly at enormous cost, the pendulum swings back and an infinite amount of injury is done to the institution which we wished to benefit. It is better to spend the money we can obtain in the best possible direction.

When one deals with the question of pay, there is no one in the community who is paid enough. One can go to any trade or industry—to the railwaymen or the crossing sweepers, and impress them with the fact that they are not paid enough, and one will make many converts. It is astonishing, but it is true. The Secretary reminds me that Lord Fisher said that reiteration is the secret of conviction: if we keep on telling potential recruits that the Army is a badly paid profession or a badly conditioned profession, although we know that certain improvements can and ought to be instituted, we cannot hope to get recruits. But I believe that most people adopt professions not for a mercenary motive but because of a vocation. A large number of extremely able men of infinite intellectual capacity and subtlety enter the Church because they have a vocation, although if they went into the City of London they would probably earn a better livelihood. Numbers of extremely agile brains are attracted to the Civil Service because the work is a responsible public task and there is a certain security, rather than to the Bar. People fundamentally choose a profession not on an examination of a balance sheet but because they feel a calling. There is a type of man, just as there is a type of officer, who wants to be in the Army, and I believe there are vast numbers of persons (and the figures are showing it) who want to adopt that calling.

There are many advantages in the Army as well as disadvantages. General Barker has said that the extraordinary fact is that so many people do join the Army: it is indeed amazing that, without any conscription at all, we can get 180,000 men

who like soldiering and who are in the Army, and 160,000 other men who are in the Territorials, without any consideration of pay at all; that is the great spectacle of public spirit which Britain offers to the world and which could not be equalled in any other country.

With regard to improving the conditions in the Army, the Lecturer has dealt very frankly with that aspect of the situation. There are so many suggestions which are made and which on close examination baffle the reformer, but we shall not be deterred and we shall seek every possible means of making conditions in the Army better.

In the meantime, let us give the Army a good name, and let us remember that every year we require an intake three times as large as that of the Royal Navy and three times as large as that of the Royal Air Force, and we get almost as many recruits as the other two Services put together.

The customary votes of thanks to the Lecturer and to the Chairman were then carried by acclamation.

OUR BEST RECRUITERS

I. THE YOUNG SOLDIER

By Lieutenant M. P. Huthwaite, The Loyal Regiment (North Lancashire).

I ATTENDED the extremely interesting lecture which was given by Major-General Barker, with Mr. Hore-Belisha in the Chair, on 24th November, 1937, at the Royal United Service Institution. At the conclusion I wished to raise three points and ask three questions. This I was unfortunately unable to do, as the time allotted for discussion was taken up by a number of distinguished retired Officers, who gave their views, based on their experience while they were serving. I am therefore instead writing down the remarks I wished to make because I know for certain that they are the views held by a great number of the junior officers, W.Os, N.C.Os and men who are now serving. The remarks refer in all respects to Infantry of the Line.

The knowledge which the junior officer has about recruiting and its problems is very limited compared to that at the disposal of the very senior officer; but about three things the junior officer can speak with authority. They are, firstly, what the mentality of the young private soldier, and therefore of his friend the potential recruit, is; secondly, the " grouses " that the young soldier has or thinks he has against the Army; and thirdly, what the young soldier tells his friends about the Army.

I keep using the word " young " with reference to the serving soldier because the young soldier is the important one. It is he who influences his equally young friend for or against joining the Army. Young soldiers, though, are in awe of their Commanding Officers and all senior officers, so the senior officer can only get an answer to any questions he may ask from his N.C.Os or old soldiers. These, by reason of their age and rank, have different interests and, because they are probably shortly due for discharge, usually stress the question of finding civil employment on discharge. The junior officer, however, can get the young soldier to talk, and I want to repeat as shortly as possible what the young soldier says, because, as mentioned above, " Bill Brown," if he is thinking about enlisting, will ask his friend " Pte. Jones," whose family live next door, what the Army is like. He will not refer to " Cpl.

Smith," whose home is on the other side, because except for a few short furloughs " Cpl. Smith " has been away for six years or so, and in any case to " Bill Brown " appears very, very elderly.

Common Grievances

When I talk to my young soldier the first thing I realize is that he is not in the least worried about :

(*a*) Going to India.

(*b*) A civil job on discharge, simply because he lives and thinks in the present, and in fact cannot think far ahead.

I then learn, although he is rather ashamed to confess it, that if " Bill Brown " asks him what the Army is like " Pte. Jones " in many cases uses a rude word. Once "Pte. Jones" starts talking he has many " grouses." Some are absurd, e.g., he doesn't like getting up so early, or he doesn't like the Sgt.-Major ; but all " Pte. Jones' " have three " grouses " which I believe are reasonable and could be rectified.

The first is the old question of pay. The lecturer explained very clearly the difficulties about raising the basic rate for all Services. It is suggested instead that tradesman's pay be obtainable in the Army on a very much larger scale than it is at present. It might quite reasonably be issued to the M.T. personnel, each of whom has on his charge a vehicle to drive, clean and maintain in minor running repairs. The Orderly Room and Quartermaster's Office contain a number of clerks who work long hours, do a lot of typing and run an elaborate filing system ; for this they certainly deserve extra pay. The drummers put in long hours of practice, and on becoming proficient could be classified as tradesmen. These are a few simple examples by which the Army could increase the pay, and thus the status, of the soldier who is prepared to work hard and become proficient at his job. There is no doubt that every potential recruit would think he could become a good clerk, or driver, or drummer and feel that the higher rate of pay was within his reach.

The second point that is usually raised is the question of stations and their recreational facilities. A large portion of the Army is stationed on Salisbury Plain and at Catterick Camp. Many " Pte. Jones' " tell me rather pathetically that they were brought up in towns with lighted streets, cinemas, dance halls, and girls to dance with. They say that although the country is no doubt very pretty they do not appreciate it, and they would be very happy if for one or two evenings a week they could get back to a town and its lights. They appreciate having more comfortable barrack rooms, but what they really want is to get right away from the barrack room to a town. They cannot, however, get

away to the town because the bus fare is too expensive, and they can only go home very rarely because of the expense of rail travel (this applies chiefly when North country regiments are stationed on Salisbury Plain and South country regiments in the North).

The suggested solutions to this problem are :—

(*a*) To give the soldier, say, three free railway warrants to his home each year and/or

(*b*) To run military bus services from country stations to the nearest big town, and charge the soldier a flat rate of, say, 6d. return. (An example is a military service from Tidworth to Salisbury).

The third point about which most " Pte. Jones' " are unanimous is the question of work. Whereas battalions should be 850 strong, they have now in many cases only about 275 men in the station. In round figures these are employed as follows :—

40 Band.
30 Drums. } These have to be kept up to strength for the tattoos.
40 M.T. Essential to maintain the vehicles.
40 N.C.Os, with no men to command.
125 employed men. These are for maintenance of barracks, Garrison employ, etc.

Extra men become signallers, mortar personnel, etc. Thus every man has a full-time job as a specialist or an employed man (cook, pioneer, waiter, clerk, etc.).

But all the work and training goes on with the same vigour and energy and thoroughness as if the battalion was at full strength. The Orderly-Room clerk has really a full day's work in the office, but in addition he has to be dragged out to give demonstrations to the R.A.F., or Indian Army officers, or practise for a ceremonial parade, or practise for months a massed P.T. display for the Tattoo, or go on company or battalion collective training, or go to school. It is my undoubted opinion that the private of to-day is doing a good deal more than a reasonable full day's work. Add to that the fact that, if he is in a delightful country station, he has very few facilities for amusement, and you have a very unsatisfactory situation.

We all know quite well that as officers we are prepared to work very hard, but we also know that we can go away for a week-end leave and come back to our work reinvigorated by it. " Pte. Jones " cannot do this. The solution to the work problem would appear to be to realize that to have an efficient Army we must have men, and to draw in our horns and only do such training and work as we can honestly do with

the numbers we have available. Let us make every man efficient in the use of his weapons, but cut out collective training (the officers and N.C.Os who are available can do tactical exercises without troops and skeleton schemes). Let us say we cannot have enormous ceremonial parades and terrific demonstrations ; let us do away with all the Tattoos except Aldershot.

Suggested Remedies

Had I been speaking at the lecture I should have closed my remarks by asking three questions of the Lecturer :—

(1) Has the possibility of giving the soldier an opportunity to earn extra pay as a tradesman on an increased scale been considered ?

(2) Is it not possible to provide more facilities for soldiers to get right away from barracks for real recreation of the type that appeals to them ?

(3) Could the question of limiting our training and work in general to suit the numbers now available in battalions be considered ?

Let us remember that it is common sense before one adopts a trade to inquire about it from someone of your own age and ideas who is already in it. The young serving soldier is our best recruiter or our worst obstacle. What we must aim at is to make it possible for " Pte. Jones," with a year's service, to say : " In the Army you get paid according to how hard you work and how good you become at your job. We have a fair day's work, and then it's easy to get to " Anytown " to a cinema or dance hall. It's a good show. Take my tip and join up."

II. THE OLD SOLDIER

By " Nous "

NEARLY all the suggestions that have appeared recently to persuade young England to step into the Recruiting Office, have been handicapped by the financial outlay that would be involved were they adopted. The following suggestion would not cost one penny, and might do more good than any of them if it were adopted in every Regiment.

Most writers on the subject start their discourse with a list of the causes of the unpopularity of life in the Army. High on most lists is the soldier's " six years in India, without home leave, in a bad climate,

without the society of women—and a long journey home at the end of it in an uncomfortable, crowded trooper." The statement stops short of the real cause. The thousands of time expired soldiers, who step off those troopers every year, are largely the cause of the shortage of recruits in the Army.

Without further preamble the suggestion follows in narrative form. At the end of the last trooping season a young Officer was given the task of interviewing all the men of his Regiment on his trooper that were due for discharge or transfer to the Reserve. His instructions were to try to put each man on the right road to find work on leaving the colours, and to give him advice and addresses which might be of use to him.

Being full of zeal the young Officer gave the matter much thought, and in addition to carrying out his duties to the best of his ability in a "heart to heart" talk with each man, he concluded each interview with the following remarks :—

"You know there is a shortage of recruits at the present moment. You also know that there are a large number of unemployed, although many of them are good fellows, who have been trying to get a job for a long time. I believe that the chief cause of the shortage of recruits is that every year a large number of fellows step off the trooper, after six years in India, straight into civilian life. I don't know whether you enjoyed your time in the Army or not—(pause for virtuous and loyal noises)—but I know that there are many grievances about the soldiers' life in India—many of them justifiable."

"With all these petty annoyances fresh in his mind the "ex-soldier" meets all his friends and girl friends, many of whom, or their friends and relations, may have been thinking about joining the Army. They all ask him how he enjoyed his time. The average fellow's answer is probably unprintable, and it dissuades potential recruits."

"Now, before you start airing your view I would like you to remember two things :—

Firstly : Every man that you dissuade from joining the Army is a potential competitor for the job *you* now want. That is putting the matter on its lowest level.

Secondly : In a few months time you may well find that your memories of army life compare very rosily with the facts of the struggle for existence in civil life."

The young Officer said that they all seemed to see the point of not

making fresh competitors for the job they were getting anxious about finding. He justified his action by pointing out that he was thereby helping his men to get employment, since if the recruiting situation improved, the unemployment figures would decrease. The writer thought that the young Officer was rather a bore, but he still feels that if the gist of his remarks were to be presented to *every soldier* on leaving the colours, the result on the recruiting statistics would be sensational.

BALLOON BARRAGES

By Air Commodore J.G. Hearson, C.B., C.B.E., D.S.O.

On Wednesday, December 8th, 1937.

Air Chief Marshal Sir Hugh C. T. Dowding, G.C.V.O., K.C.B., C.M.G., A.D.C., in the Chair.

The Chairman introduced the Lecturer.

LECTURE.

THE history of Balloon Barrages is meagre and recorded experience in their use is practically nil. These Barrages were used towards the end of the 1914–1918 war, but any effect they may have produced then was probably more moral than destructive. Since the advent of the parachute as a part of the equipment of all flying personnel, moral effect has undoubtedly become more difficult to achieve, and though it is probably still greater than the destructive effect, it can, I think, be accepted that the moral effect of a Balloon Barrage will be directly proportional to its destructive effect. Should the moral effect be twice as great as the destructive effect, it will still be nothing if the destructive effect is nothing.

Towards the end of the War, two or three so-called " balloon aprons " were used in the defence of London. These were formed by tethering four or five balloons in a line and stretching between them a network of light steel cables. Such an arrangement has a number of fairly obvious drawbacks. The weight of the network, even when constructed of the lightest cables, is a very serious load on the comparatively small buoyancy of anything but unhandily and expensively large balloons, and this results in a low barrage of little practical use. The network, too, tends to sag and so drag the balloons supporting it together into a bunch. When the balloons are hauled down, and I will explain presently why it is necessary to haul them down fairly frequently, the network between them must also come down to the ground. If the locality of the apron is a populous one such as in, or even on the outskirts of London, you can picture the complications which would result from lowering this steel network on to houses, trees and even perhaps overhead power wires of the Grid or tram and trolley-bus lines.

It can therefore be accepted that a modern balloon barrage will not take the form of " aprons," but will consist merely of the flying cables by which the balloons are held captive. At first sight, such a defence

may appear to be somewhat diaphanous, but if we make a few simple calculations we find that it is much more effective than might be imagined. Assuming an aeroplane of 70 ft. span passing through a line of balloons tethered at 100 yards interval, we find that there is rather less than once chance in four of it hitting a flying cable; if it does an "in and out" passage through the line, there is about once chance in two of it hitting a cable—a pretty formidable risk which no attacker could afford to continue taking if those cables are lethal, i.e., will destroy an aeroplane which comes in contact with them.

Tactical Use of Barrages

Before considering the question of lethality, let us examine the tactical uses of balloon barrages in the defence of localities against air attack. The modern bombing aeroplane is capable of carrying a useful load of bombs to as much as 25,000 ft. and, therefore, in order to be insurmountable the barrage must extend to at least this altitude. For a balloon barrage such an altitude is to-day a thing of the future, although perhaps the not very distant future. When it becomes a practical achievement from a technical, operational and financial point of view, the tactics of air defence will probably have to be not merely drastically modified but actually revolutionized, and the interceptor fighter aeroplane, the gun and the searchlight may become auxiliary to the balloon instead of the reverse, as at present.

It must, however, be borne in mind that, though a modern bombing aeroplane can carry its load of bombs to 25,000 ft., the effort necessary to do so is considerable, therefore a balloon barrage of considerably less altitude may provide a very real contribution to the defence: one of even 10,000 ft. altitude, if it is lethal and of sufficient density, may at least reduce the interceptor fighter aeroplane's task of finding its enemy by a depth of 10,000 ft. out of 25,000 ft., and that 10,000 ft. is the murkiest part of the depth of atmosphere to be searched. And so we come to a form of balloon barrage which should be particularly valuable.

Every practical student of air attack tactics knows that the very low attack made by aircraft flying at a few hundred feet above the trees and house-tops, is the form of attack least vulnerable to anti-aircraft fire and defending aircraft. This is due to the fact that the angular velocity of such aircraft about an anti-aircraft gun or searchlight position is so high that there is insufficient time for the gun or searchlight to be trained on the target before it has disappeared again. Very low-flying aircraft are also a difficult prey for interceptor fighters because they are difficult to locate and follow when viewed from above against the close background of an intricate countryside or urban area, and

even when they are located and reached, the proximity of the ground seriously cramps fighting tactics. Therefore this form of air attack is certain to be popular unless some effective defence can be devised. A low altitude balloon barrage supporting a sufficient density of lethal cables does seem likely to fill this gap in the defence, and for this purpose it need only be sufficiently high to drive the attacker up to an altitude at which he can be effectively dealt with by lights, guns and defence aircraft.

Of course, the balloons of a barrage of any altitude are very open to attack if flown by day in fine weather, but such conditions are those in which guns and interceptor fighters can act most effectively. The conditions of night and bad visibility are those in which a balloon barrage is most needed by the defence, and it is in such conditions that the balloons will be fairly immune from attack.

Siting a Barrage

Before leaving the question of tactical employment, let me deal with the problem of siting balloons. The first and most obvious method of siting balloons is to place them approximately on the perimeter of the area to be defended. If, however, they are sited equidistantly over a circular area, the probability of impact is from one to two times as great —over 80 per cent. of the area, as it is when the same number of balloons are sited equidistantly round the circumference. For purposes of simplicity I will refer to these two methods of siting as " field siting " and " perimeter siting."

If we assume a circular area of twenty miles diameter to be defended and we use six hundred tethered balloons for its defence, then :—

(*a*) with " field siting " over the area, provided the attacking aircraft flies as much as twenty miles on any course or courses within the area, there will be one chance in two of it hitting a cable if the span of the aircraft is as much as 70 ft.

Alternatively :—

(*b*) with " perimeter siting," if an attacking aircraft of similar span flies into the area at a normal through the line of cables and out again at a normal through the line of cables, and, while inside, flies any distance necessary to find its objective, there will only be one chance in four of its hitting a cable. If it flies obliquely through the line of cables the chances of its hitting one are, of course, greater, but such a line of flight can and probably would be avoided in most cases.

It can be seen, therefore, that this " field " method of siting results in a considerable gain in effect or conversely saving in balloons over " perimeter siting." " Field siting " has other advantages over " perimeter siting." One very obvious method of reducing the effect of a balloon barrage is to fly through it in " line ahead " formation with perhaps specially equipped aeroplanes in the van. Such a method of attack, which amounts really to " sweeping," is obviously more effective against " perimeter-sited " balloons than against " field-sited " balloons. Dive bombing is a form of attack which no defence scheme can afford to ignore, and it is met to a certain extent at least by " field-sited " balloons, whereas " perimeter-sited " balloons would be of little or no value. Lastly, by using " field siting," a barrage of very high impact probability can be achieved without the necessity of working balloons in dangerously close proximity to one another.

There are certain disadvantages to " field siting " as compared with " perimeter siting." For the same number of balloons, " field siting " results in the balloons being appreciably further apart than is the case with " perimeter siting," and this increases the difficulty of intercommunication between balloons and supply services for gas, petrol, etc. The supporting of one balloon crew by men from adjacent balloons is more difficult for the same reason. Further, it may be contended that " field siting " does not attempt to prevent the attacker from reaching his objective, but this objection is probably more apparent than real. In the case of a large compact area, such as London, containing numerous different objectives, " field-sited " balloons seem more likely to prevent a bomber getting to his particular objective than " perimeter-sited " balloons round the area. Again the moral effect of lethal balloon cables, which perhaps will always be greater than the destructive effect, will probably be greatest when these cables are in the closest proximity to the objective.

Probably a compromise between " field " and " perimeter siting " will prove the best, especially if the shape of the area to be defended is irregular.

Lethal Cables

Now to consider the question of lethality. It can be accepted that a cable heavy enough to destroy a modern bombing aeroplane by the shock of impact, or strong enough to stand up to the tension which will be imposed by the forward flight of such an aeroplane, cannot be carried to a sufficient altitude by a reasonably handy and inexpensive balloon. This is the case even with a low altitude barrage such as that required to meet a low-flying attack, and the problem, of course, becomes more difficult the higher the barrage. It is therefore necessary to adopt more

subtle methods. On this point I must content myself with assuring you that this problem of making the cable lethal against modern aircraft *has been found capable of solution.*

Should balloon barrages become effective factors in air defence, then undoubtedly counter measures will be forthcoming and these are most likely to take the form of protective devices on aeroplanes—either on all aeroplanes or on special duty cable-sweeping aeroplanes sent in advance of a raid. Such contrivances are difficult to fit on an existing design of aeroplane, and it may well be found no easy matter to incorporate them in new designs. Methods of defeating them when they are incorporated, are under consideration and test, for an expensive programme of balloon barrage defence would hardly be justified if the enemy's first counter moves had not been anticipated and prepared for.

The Balloons

For the benefit of those who have little or no knowledge of the properties of hydrogen gas and of the problems involved in the design and construction of balloons, I propose to give you a little very elementary information on these matters.

Hydrogen is the gas normally used in balloons and airships because it is the lightest of all known gases, and is fairly easily and cheaply produced. It has certain disadvantages : it is highly inflammable and, mixed with air, forms a very explosive mixture ; it is colourless, tasteless and odourless, and therefore its presence is not easy to detect ; it is not poisonous but, if breathed in quantity, causes suffocation. It will be realized, therefore, that it is a gas which needs to be handled with care. I do not propose to deal with details of its manufacture : there are various methods and an enormous quantity of it is produced for commercial purposes and as a by-product of various manufacturing processes. But there is the problem of transport and storage, which is a considerable one in an undertaking such as an extensive balloon barrage. In the main, this problem can be met by the use of high-pressure cylinders carried on trailers.

Tethered balloons are always of streamline form in order to reduce the effect of wind. This form is probably familiar to you all, as are the stabilizers at the rear end ; these latter are, of course, necessary in order to maintain the balloon in a correct attitude in relation to the direction of the wind. Such balloons are often called " kite balloons," because they are designed to give a " kiting " lift in a wind in addition to the gas lift. The design generally provides that the forward component of the kiting effect shall just balance the effect of the wind drag on the

cable and balloon. By this means the balloon is kept at approximately the same altitude whatever the velocity of the wind.

Balloons are made of fabric, such as silk or cotton, " proofed " with rubber or other material to make them gas-tight. In this respect you must know that a proofed fabric which is reasonably airtight will be far less impervious to hydrogen. In general, the heavier the fabric and the more heavily proofed it is, the more gas-tight. Air-tightness of a gas container is more important than gas-tightness, because it is a fairly simple matter to add hydrogen to replace any lost, but a much more difficult matter to raise the purity of gas in a balloon where it has been seriously lowered by the entry of air. If topping up is neglected, there is always the danger of the gas arriving at a degree of impurity in the balloon which constitutes an explosive mixture. Since the lift or buoyancy of a given volume of hydrogen is limited, it is obvious that to attain a maximum altitude we must reduce the weight of the fabric and proofing to a minimum ; this in practice results in a balloon which is by no means gas-tight to hydrogen and not altogether air-tight, and on this point, I will say more later on.

For the sake of lightness, cheapness and ease of storage and transport when deflated, balloons, for the purpose we are considering, are always made non-rigid, i.e., they depend on the pressure of the gas inside them to keep their form. The higher the pressure of gas in a balloon, the stronger and heavier must be the fabric of which the balloon is constructed. It is important, therefore, that the pressure of gas in a balloon should be kept as nearly constant as possible, whatever the altitude of the balloon. Since the pressure of the atmosphere becomes less and less with increase in altitude, the gas contained in a flexible envelope like a balloon tends to expand and increase in volume. If this increase in volume is not allowed to take place as a balloon ascends, the pressure of the gas will increase, and eventually the envelope may burst. Therefore, we must have an expandable container. We could, of course, keep the pressure constant by valving gas into the atmosphere as the balloon ascends, but not only would this result in waste of gas and loss of lift, but when the balloon descended and the gas had again contracted—since it has been reduced in quantity by valving—the balloon would become flabby, lose its streamline form and so might become unmanageable in even a moderate wind.

We must therefore have an expandable container, and this can be achieved in several different ways. The simplest and most usual method is by dividing the interior of the balloon into two compartments by what I will call a false bottom. Hydrogen is forced into that part of the balloon above this false bottom. If we force in sufficient volume

of hydrogen to fill the balloon completely, the false bottom is pressed on to the real bottom and the two compartments virtually become one. The gas-containing compartment is then not capable of further expansion. If, however, we force in some lesser quantity than a balloon-full of hydrogen and then force air into that compartment of the balloon which lies under the false bottom, the false bottom is raised and the balloon is filled to a suitable pressure, partly by hydrogen and partly by air. In practice this air is forced into the air compartment, or ballonnet, as it is called, by the pressure of the wind through an open scoop in the underside of the forward end or nose of the balloon. We now have a reasonably taut balloon, and as this ascends, the hydrogen increases in volume and presses down the false bottom, expelling the air from the ballonnet through the scoop until the hydrogen has expanded to a volume sufficient to fill the whole balloon and the false bottom is pressed against the real bottom. The size of the ballonnet and the volume of the original charge of hydrogen are matters of calculation dependent upon the highest altitude to which it is intended to fly the balloon.

Another method of making a balloon of variable capacity is to construct the envelope with longitudinal gores of fabric over which are laced elastic cords so that the gores are held in folds and not stretched taut like the remainder of the fabric. As the gas expands with altitude, this elastic cord lacing is stretched and the fabric gores are gradually pulled taut, thus increasing the circumference of the balloon and its capacity.

A third method of making such a balloon is to make it lobular in section, that is, a section consisting of a polygon on each side of which is described an arc of a circle. In the actual balloon the sides of the polygon are elastic cords and the arcs the fabric envelope. Hydrogen is forced into the balloon until it has taken up its lobular form and the elastic cords are just taut. When the balloon ascends and the hydrogen expands, these elastic cords are stretched and the balloon takes a more and more nearly circular section, thus considerably increasing its gas capacity.

There are certain drawbacks to these forms of construction using elastic cords. The more you elongate a piece of elastic cord, the greater becomes the force necessary to elongate it further, and therefore with these forms of construction the pressure of the gas increases with altitude, a state of affairs we wish to avoid, as it calls for increased strength of fabric. If a considerable altitude is attained and the balloon remains there for some time, the elastic cords tend to freeze in their extended condition ; if then the balloon is hauled down rapidly, the frozen elastic cords have not time to thaw out, and, having temporarily lost their

elasticity, do not contract the balloon to its original size and shape ; the result is a flabby balloon with its attendant dangers. We are investigating an interesting proposal to overcome these disadvantages, but I regret that I am not permitted to say more at the moment.

I have already alluded to the fact that the ordinary proofed fabrics used for balloons are not completely air-tight and still less gas-tight to hydrogen. Hydrogen is constantly escaping in small quantities from an inflated balloon while oxygen and nitrogen, the main constituents of air, are constantly passing into the balloon through the fabric in rather smaller quantities. The results of this are firstly, the balloon tends to become flabby through reduction of the contents, and secondly, the purity of the hydrogen inside becomes lower. The latter is the more serious because, not only does it reduce the lift of the balloon, but it leads towards an explosive mixture. Both are dealt with by a periodical introduction of more hydrogen ; this is known as " topping up," which may be needed daily : the frequency and the amount of this " topping up " depends on a variety of causes, such as the nature and condition of the fabric and atmospheric conditions. It is, however, a very real problem in the maintenance of a balloon barrage : it entails a continuous supply of hydrogen being available for all balloons and a periodical hauling down of all balloons, at least to the winch if not actually to the ground. Even with regular " topping up," the purity of hydrogen in a balloon gradually decreases until a time comes when, even if the lift is sufficient, the gas contained in the balloon becomes dangerously near an explosive mixture. At this point deflation and reinflation become necessary.

Cables

A great deal of research has been made into the structure and manufacture of cables. A high strength weight ratio and extreme flexibility are essential requirements, the first to reduce the load to be lifted by the balloon as much as possible and the second to ensure its even and easy coiling on the winch drums. For high altitude work tapered cables are used, because the load at the lower end is very much less than at the upper, the lift and drag of the balloon being offset by the weight of the cable itself. Cables in use to-day are constructed of several strands each consisting of many wires, the steel being of a high tensile quality of over 200 tons per square inch. Such a cable of over a ton breaking strength can be less than 3 mm. diameter.

Winches

So much for the balloon and its flying cable. The next main item of equipment is the winch, which is normally mounted on a six-wheeled

chassis of some description. In this way a winch can be driven along any road or over fairly rough ground with the balloon on its flying cable at any height desired but preferably not below about 300 ft. or too near its ceiling. Of course the path of a winch lorry must be clear of overhanging trees, telephone and power cables, bridges, etc.; a balloon on a flying cable can be pulled down and passed over such objects, but it is a tedious business if it has to be repeated frequently. In the case of local distribution telephone wires, it will probably be simplest to disconnect the wires and reconnect them. A balloon which has to move its position any considerable distance is best deflated, packed, transported and then reinflated in the new position. To meet emergencies, a winch must be capable of hauling down at high speed, 1,000 to 1,400 ft. per minute.

Casualties

With regard to the inflation, topping up and flying of captive balloons in restricted localities such as the streets of a town like London, we have much to learn, but I have no reason to doubt that it can be done to an extent which will enable us to find a suitable site within a short distance of any desired point on a map. Providing we can site with this degree of exactness, the loss of effect due to local errors will be negligible.

We must, of course, expect losses in the operation of a big and fragile concern such as a balloon barrage. Losses due to enemy action may be of two kinds: the first, due to collision, are not expected to be considerable after the first few weeks, for we feel with come confidence that such losses will result in an almost "one for one" loss of an aeroplane by the enemy. If this should prove to be a correct anticipation of events, it is unlikely that he will persevere in his attempts to penetrate the barrage. The second kind of loss will be that due to the enemy shooting down the balloons. It is not anticipated that these will be considerable, as the task should be a hazardous one to carry out in such closely defended localities. If concerted attacks of this kind are made with any frequency, it is a clear indication that the barrage is uncomfortably effective, and its locality can become an excellent rendezvous for defence interceptor fighters. Against such attacks, if they are persisted in, occasional balloons carrying considerable charges of high explosive, fired electrically from the ground on the approach of an attacking aircraft, should prove a strong moral deterrent as well as occasionally destroying an attacker.

Besides losses of and damage to balloons which may be occasioned by enemy action in the form of direct attack or as a consequence of impact, the defence anti-aircraft fire will undoubtedly cause certain damage. This will mainly take the form of punctures on the top of

balloons caused by falling shell fragments. Such holes will be small, deflation will be slow, and there should generally be no great difficulty in repairing them at the winch site, without deflation. Severe weather must also be taken into account when considering possible losses. In the past, captive balloons have been mainly flown for purposes of observation and this duty seldom, if ever, demanded that they should remain up in adverse conditions such as very high winds or serious electrical storms. Barrage balloons, on the other hand, should, if possible, be capable of weathering the worst conditions, for it is in such conditions that defence aircraft, lights and guns become least effective. Although practical experience is needed, our present equipment should, according to calculations, be proof against any but violent local winds such as are sometimes encountered in line squalls. Even here there is an element of safety in the fact that such storms seldom occur at anything but low altitudes and the balloons can generally be expected to be above them. Electrical storms are, however, a more difficult problem. Recently, a number of balloons were destroyed at Cardington by fires caused by " brush " discharges on the fabric, due to static charges of electricity induced by the proximity of highly charged clouds. Such discharges are difficult to eliminate entirely, but the problem is under examination, and I think we can say that we have gained much valuable knowledge from the experience which will help us to avoid similar conditions in future as well as counter them. Another danger to which captive balloons are subject in electrical storms is that an actual lightning discharge may take place either to the balloon itself or to its cable. A balloon cable under such conditions is really a lightning conductor thousands of feet high and yet it is not designed to accommodate a lightning discharge. The probable result where one is struck is the loss of cable and balloon and our endeavours must be centred on eliminating the danger to the winch crew. Here we believe simple expedients and precautions should at worst reduce the danger to a negligible one. In our present state of knowledge and experience, however, it would be unwise to claim that we can weather any storm, and it may prove necessary to lower a barrage to safety under extreme weather conditions, but these will probably also prevent the flying of aeroplanes by any but the most experienced and expert pilots.

I have set before you some of the numerous problems involved in the utilization of balloon barrages in the defence of localities against air attack. Public policy has prevented me from describing to you our methods of dealing with some of them. It must be admitted that we still have much to learn in the matter of operation, but I feel justified in concluding this lecture on an optimistic and confident note. A balloon barrage as part of the air defences of London is almost an accomplished

fact. It is not a political stunt and it is not merely a " scare-crow." It will be a very real and considerable contribution to our air defences, meeting a requirement which cannot be met by any other means known at present. Further, the elaboration and extension of this form of defence show every promise of becoming practical and valuable in the not too distant future.

DISCUSSION.

The Lecturer was asked a number of questions to which he made the following replies :—

SQUADRON LEADER J. A. MCDONALD : How many personnel are required to operate one balloon, and from what source will the personnel eventually come ?

THE LECTURER : The number of men required to operate a balloon depends a good deal on the size of the balloon which is being used. We have got a certain standard equipment at the moment, but we are very hopeful of being able to reduce the size of the balloon in the future, and with it the number of personnel required to operate it. The number of men at present considered necessary for our present balloons is ten per balloon, and these men are recruited on the Auxiliary Air Force basis. Of course no men go into the air.

LIEUT.-GENERAL SIR ROBERT GORDON-FINLAYSON : What is the cost of a balloon, and cable and winch ?

THE LECTURER : Again the answer depends on the size of the balloon, the type of the cable and the winch. We have got a standard equipment which is being developed ; I am afraid I have not got any information as to its cost.

ADMIRAL A. CRAIG WALLER : Has this method of defence against aircraft ever been tested in practice, or have we any information as to its having been used in the wars which have been going on recently in different parts of the world.

THE LECTURER : Our calculations are based on experiments of a limited nature. The ultimate testing to destruction will have to be made, but for the moment we are not in a position to carry out that complete test, although these experiments of a limited nature have been sufficient to give us confidence in the calculations that have been based on them. As far as I have been informed there have been no instances of balloon barrages being used against aircraft attack in wars going on at present.

CAPTAIN E. ALTHAM, R.N. : Could the Lecturer tell us whether the dangers to balloons due to lightning discharges are also present in the case of airships when they are in contact with the ground. From all accounts of the disaster to the " Hindenburg " it would seem to have borne a very close relation to that particular cause of damage to balloons.

THE LECTURER : Static charges accumulate on the surface of airships in exactly the same way as on the surface of balloons, and I believe that in the case of the " Hindenburg " it did, at the moment when it was ignited, practically come into the condition of a tethered balloon—namely, when its anchoring cable was actually lowered to the ground.

CAPTAIN A. T. BARBER : What is the minimum requirement as regards the purity of hydrogen for these balloons, and to what extent can it be contaminated by air infiltration before the balloon is out of action.

THE LECTURER: Anything below 80 per cent. hydrogen is an explosive mixture, and in practice we put our lowest limit of impurity at 82 per cent. hydrogen.

MAJOR E. R. CULVERWELL: I should like to ask if it is always necessary to have crews, and if so how they mutually support each other.

THE LECTURER: A crew is always necessary because various circumstances may arise, such as the puncturing of a balloon, an electrical storm coming up, or a balloon requiring to be topped up, which will necessitate it being hauled down to the ground.

Under certain conditions it may be difficult to haul a balloon down, especially in a boisterous wind. On such occasions it should be possible to take men from the crew of an adjacent balloon which is flying happily at altitude and use them to reinforce the crew of the balloon which is carrying out a difficult operation.

LIEUT.-COLONEL M. B. SAVAGE: How is touch kept between the different crews that are putting the balloons up?

THE LECTURER: Communications for the purpose of issuing orders to balloons, are of course necessary and these can be made as elaborate or as simple as is considered advisable. Balloon barrages of this nature are likely to be located in or near populous districts where it will usually be possible to utilize "Mr. Smith's" telephone just across the road. At the worst the balloons will probably be close enough to one another for orders to be conveyed by means of motor cyclists and cyclists or by passing orders on from crew to crew.

MR. WILDER: Can a balloon be detached from its winch and the winch used for another balloon; must it remain attached to its winch?

THE LECTURER: While the balloon is flying in the air it normally has to remain on its winch. It can, of course, be detached and fastened to some anchorage, but it is rather an unsafe situation, because one never knows when it may be necessary to haul in fast. This precludes the winch from being utilized for another balloon except to a very limited extent in emergency by using a separate bollard.

MR. S. VEALE: Would it be possible to use two balloons in tandem to make the barrage higher?

THE LECTURER: Yes; but this means additional cost, greater difficulties of manipulation, and increased vulnerability. Also, the lower balloon is an indication of the position of the cable at that height.

FLIGHT-LIEUTENANT W. C. SHEEN: The Lecturer mentioned putting a high explosive charge in a balloon and hoping to blow an aeroplane up thereby. How large would such a charge have to be, how close would the aeroplane have to be to the balloon; and would it not be likely to result in blowing balloons up merely in the hope of getting an aeroplane?

THE LECTURER: Of course it depends very much on the explosive used. There was an instance during the late war, in Salonika, where an aeroplane had made a regular habit of coming over and shooting down certain balloons, and it was very satisfactorily destroyed by, I believe, about 500 lbs. of TNT. Exactly how close the aeroplane was to the balloon I do not know, nor do I suppose anybody did, even at the time. We are going into the question of the distances at which blast effect on the structure of an aeroplane will be effective with different types of modern explosives, but the matter is hardly worked out to a practical conclusion as yet.

THE CHAIRMAN.

In dealing with the question of field *versus* perimeter siting, the Lecturer told us that the basis of the calculations which had been made were that the enemy

aircraft should fly at least one diameter—that is to say he flies one radius into the centre of the defended perimeter and out again. In defending a perimeter of the nature of London I think it is by no means certain that the average attacker would fly such a distance. Many vulnerable objectives, such as the docks and so on, lie close to the eastern border of London, also, of course, there is the human element of the pilot: he wants to get his job done and be away again as soon as possible, so I think that we must keep that in mind when we are setting against one another the advantages and disadvantages of the two different types of siting.

Then the Lecturer mentioned dive bombing as a particular danger, and a feature in which the perimeter siting was less effective than the other. It so happens that at the present stage in the development of aircraft dive bombing is not very practical, the reason being that the latest aircraft are of very efficient streamlined form and as soon as you put them into a dive they very shortly achieve such a high velocity that it is difficult to pull them out of the dive without structural failure. I do not say that that will always be the case. Dive bombing is such an attractive method of attack that I think it is quite possible that in a few years time some of these very high-performance bombers will have developed spoiling devices which they can extend at will so as to enable them to adopt a diving attitude without at once attaining an impossible speed.

One other point I wanted to make is the desirability of keeping the balloon barrages mobile. I think that that is a very important factor in all our defensive preparations for the defence of this country. One must remember that the enemy has the complete initiative; he can choose how he will attack, he can choose when he will attack, he can choose where he will attack, and he can choose if he will attack; therefore the principle is a very important one that all our defences should be as mobile as possible, and this applies to guns, searchlights, aeroplanes, balloons and every other form of frightfulness. The enemy airman should never be able to say, "I am safe here anyway; there is nothing that can do me any harm here." As the effect of a balloon barrage is to a very great extent moral, backed, of course, by physical effect as well, I think that it is very desirable that the siting of balloon barrages should be frequently varied so that the enemy will never know, when he is flying in bad weather and with low visibility, that he is safe from the barrage.

I would like to thank the Lecturer very much for a most interesting lecture. He has had considerable limitations, on grounds of secrecy, on what he would like to have said, nevertheless he has covered the subject very fully.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

THE DESTRUCTION OF SEA-BORNE COMMERCE

SOME LESSONS OF THE AMERICAN CIVIL WAR

By Captain R. D. Oliver, D.S.C., R.N.

THE naval side of the war which took place in 1861–65 between the Northern and Southern States of America, otherwise known as the Federals and the Confederates, has certain points in common with the German campaign against our commerce in 1914–18, and it may also be of interest to compare it with the civil war now raging in Spain. The war lasted four years and was extremely bloodthirsty; it only came to an end with the complete exhaustion of one party to the struggle. Incidentally, it is a good example to quote against those Pacifists who extol disarmament as being the certain road to peace.

Wars on commerce are, in the main, extremely tedious both to those who take part in them and to those who subsequently have to record them. In consequence there is a tendency to throw into high relief the achievements of the forces of attack and to ignore the thankless task assigned to the defence. But the British Navy always has this latter task to undertake, and it behoves us, therefore, to study the history of these campaigns and to profit by the mistakes which most frequently recur.

In 1861 the bulk of the population of the United States was concentrated in the East. California was conquered in 1848 but still remained a different State separated from the remainder by the Rocky Mountains, uncrossed as yet by railway or telegraph. In the North the exploitation of mineral wealth was resulting in an industrial development. In the South the cultivation of primary products of the land developed into large and rich plantations dependent upon cheap slave labour; moreover, the South was dependent upon maintenance of the principle of free trade with the large manufacturing countries of the world, particularly Great Britain. The latter explains the surprising amount of sympathy which the Southern cause could command in England despite the fact that that country was the first champion of the abolition of slavery.

The causes of war were, in the main, economic, social and racial. Abraham Lincoln, the first "Republican" President, represented the interests of the North; hitherto the main trend of economic legislation had favoured the South. Slavery was not the principal issue; it was their own liberty for which the Southerners fought. Secession was

voted on 4th March, 1861, by the States of South Caroline, Mississippi, Alabama, Florida, Louisiana and Texas, and they set up a Congress at Montgomery. Jefferson Davis was declared President, and immediately appointed two delegates to represent the Confederation at Washington. Their letters of credit were refused and, on 11th April, the Confederates opened their attack on Fort Sumter at the entrance to Charleston.

Neither side was in a position to undertake serious operations. The North had a population of twenty-one millions, including the standing army, such as it was. The South numbered six millions white, and three and a half millions of blacks, who naturally could not be expected to fight for their own slavery. There was an almost complete lack of munitions and every possible means were employed to improvise guns and rifles. The Southerners were successful in capturing the arsenals at Norfolk and Pensacola with the better part of their contents, and the booty at Norfolk included the hull of the " Merrimac."

The Northern frontier was a line joining Cairo and the Potomac. On the West, the neutral frontier of Mexico was of little use owing to absence of railway communications ; these stopped at the Red River. During the second year of the war the Federals developed an offensive down the Mississippi which virtually restricted the Western frontier to that river. For the rest, the Confederates had 2,000 miles of Atlantic and Carribean coast line. On the other hand the Union possessed an open line of communication with Canada to the North and some useful harbours on the Atlantic seaboard. The West was closed by the Rocky Mountains and communication with California, which remained loyal and furnished much assistance, especially in gold, was entirely by sea. The route employed was across the isthmus of Panama, and it constituted a constant preoccupation to the Federal forces.

The North, by virtue of the fleet, was " Mistress of the Sea," and was accorded the belligerent right of " Visit and Search " by neutral nations. The main naval offensive took the form of a close blockade of the southern coastline. From the Chesapeake southwards the coast is lined with sandbanks or keys enclosing shallow draught inshore channels, some of which the Confederates protected by forts. The North retained possession of Key West. Britain owned the Bahamas, Spain owned Cuba ; and their principal ports, Nassau and Havana, became the foci of the contraband trade.

Neutrals—a Comparison with the War of 1914–18

The declaration of blockade by the North necessitated the right of " Visit and Search " being accorded by the neutrals ; from this followed

their recognition of the South. Great Britain declared her neutrality and recognized the belligerents on 13th May, 1861. France followed on the 10th June. Thereafter the Southerners could not be looked upon as rebels, nor the war as the action of police forces in repressing a rebellion. It is interesting to compare this situation with that of the rival forces in Spain to-day.

International Law was governed by the Declaration of Paris of 1856. This contained a definition of the means by which a blockade might be considered to be "effective," and it prohibited the issue of Letters of Marque to privateering vessels. The United States had refused to sign the Declaration, and adhered instead to their doctrine of the "freedom of the seas," i.e., the inviolability of the private property of neutrals. But the Federal Government, foreseeing the extent to which their trade would suffer from privateering, declared their acceptance of the Declaration of Paris. Great Britain decided, however, that she, as a neutral, could not accept the convention during the progress of hostilities because it was so much to the advantage of one of the parties. The rules of neutrality were not codified until the Hague Convention of 1907; but the rules which Great Britain declared on 31st January, 1862, were as follows:—

(1) Ships of war were not to enter Nassau or to use the Bahamas anchorages.

(2) Time in other ports was not to exceed twenty-four hours. If two enemies should enter the same port, their time of departure was to be separated by twenty-four hours.

(3) The quantity of fuel which might be supplied was to be limited to sufficient to reach the nearest harbour in the applicant's own country. This privilege was not to be extended to any particular ship more often than once in three months.

(4) "Prizes" were not to be taken into British ports.

These rules were disregarded on many occasions by both sides. The French granted much greater facilities, on one occasion refitting the "Florida" for five and a half months, despite diplomatic protests. They did not adopt the English rules until it was obvious which side was going to win.

Naval Situation—Northern

On the outbreak of war the whole fleet and nine-tenths of the Merchant Service were in the possession of the Northern party. The Confederates were unable to build ships and their eventual defeat was mainly due to the slow strangulation of all means of external communication. Nevertheless, the process took four years.

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In March, 1861, the American fleet numbered ninety ships, but the effectives were few in number and scattered all over the world. The loyalty of the officers remained uncertain. The ships' companies numbered some seven thousand men who were for the most part foreign born and of very mixed descent, but they were solidly faithful to the Union and its flag. Serviceable ships numbered forty-two and mounted 556 guns. Of these there were available in harbour on outbreak of war only four ships of 25 guns and 280 men; the remainder were off Pensacola and Vera Cruz. The establishment of 7,000 men in March, 1861, expanded to 34,000 in July, 1863, and 51,500 by the end of the war. Of 1,563 officers on the list 321 deserted to the Confederates.

The war effort of the Northern States is comparable to the anti-submarine campaign of 1917–18; at the end of the war 208 ships had been built and the majority armed, and 418 ships had been bought, including 313 which were propelled by steam. Their war aims were:—

(1) The blockade of southern ports.
(2) Combined expeditions against the southern coastline.
(3) Commerce protection.

Naval Situation—Southern

The meagre resources available to the Confederate States consisted of two small ships, the "Havana" and "Nashville"; several little steamboats; some old slave-ships; and a variety of pilot cutters, excise cutters, etc. In these circumstances they set their hearts on the provision of an armoured ship which, by virtue of her invulnerability, could take on the whole Northern fleet. The captured "Merrimac" was cut down and her sides covered with iron plates. Unfortunately, the other side got wind of this and produced the turret ship "Monitor," in time to readjust the situation.

After the destruction of the "Merrimac," attention was directed to the building of coast defence works and submarine obstructions. Orders were placed in England for the construction of commerce-raiding cruisers, and every effort was made to bring pressure upon the enemy through the destruction of his trade and in particular by interfering with his line of communications with California. The "California packets" were comparatively large paddle-driven ships of 12 knots. They shifted an average cargo of 40 million dollars a year from California to New York, mainly by the Panama route where a railway train did substitute for the present canal. The focal points on this route were the terminal ports and the Windward Passage.

In 1861 the American Merchant Marine was second only to that of Great Britain and comprised about 1400 steamships and 5000 sailing

vessels. Ships of those days were small and slow and spent a long time at sea. It can be said with truth that the " Stars and Stripes " were to be found in every quarter of the globe. Their points of greatest concentration were well out in the Atlantic at the intersections of the " sailing routes." There were also large concentrations of fishing craft, e.g., in the Gulf of St. Laurence, 600–800 ; off the Grand Bank, Newfoundland, 200–300 ; also the whaling fleets of the Behring Sea and the Azores.

The telegraph was in existence for land and short sea routes, but the transatlantic cable, which was put into operation in August, 1858, failed the following month. Direct communication with Great Britain was not re-established until the " Great Eastern " laid her cable in July, 1866. The average times for messages to reach their destinations were : Antwerp—29 days ; the Cape—60 days ; New Orleans blockade squadron—15 days ; and the Antilles—over 10 days. The business of organizing a system of commerce protection under these circumstances was far from easy and left much to the initiative of individual officers.

The sea was every bit as vast and the combatants were as badly off for bases as were the Germans in 1914. All the cruisers had sails and could keep the sea for long periods, but the advent of steam was felt both as regards stocks of fuel and spare parts for repairs. The modern necessity for naval bases in every quarter of the globe had become apparent. The ease with which steam-driven cruisers could overtake and destroy sailing merchant ships is comparable with the domination of the merchant ship by the submarine in 1916–17.

The First Phase—Privateers

The Congress at Montgomery established their prize law on 14th May, 1861, and issued Letters of Marque " against the ships and goods of the Northern States and of their citizens." A reward was promised of 25 dollars per prisoner, and 20 dollars per head of crew of every ship that was sunk. Abraham Lincoln promptly replied that all privateers captured would be treated as pirates. This state of affairs persisted until the protests of neutrals and the possibility of reprisals on prisoners of war put a stop to it.

The proclamation of Jefferson Davis inviting applications for Letters of Marque was received with great enthusiasm, and hundreds of thousands of dollars were subscribed in a few hours towards the fitting out of vessels. The principal ports were Charleston and New Orleans, but operations soon proceeded from all the small ports and sounds along the coast. Owing to the shallow entrances of these places many large and valuable prizes were destroyed at sea through inability to bring them

in. At the outset the privateers had everything their own way, and by August the damage done to the Federals amounted to 20 million dollars ; but far more serious was the general panic which ensued and which made it impossible for Northern ships to obtain a charter party. The result was that, before long, the British had captured the bulk of the trade.

This state of affairs was not to last, and by the end of 1861 the tide was turned by the establishment of a strict blockade of the southern coast. This was made practicable by the arming of a large number of auxiliary cruisers and the occupation of numerous bases along the Confederate Coast. It became impossible to bring prizes into court, so the commercial value of privateering was lost. Only steamships could run the blockade and better profits were to be made by that means. It is interesting to note that the end of this phase marks the end of the sailing era ; the last actions fought under sail were between the Federal cruisers and their feeble adversaries.

The Second Phase—Auxiliary Cruisers

It will be remembered that the Confederates possessed a few small ships in their harbours on the outbreak of war, and steps were at once taken to arm these as auxiliary cruisers. The " Havana " was armed with four 24-pdrs. and an 8-in. gun, and renamed the " Sumpter." By the time she was ready for sea the delta of the Mississippi had been blockaded by larger and faster ships—the " Brooklyn " and " Powhattan " ; but awaiting her opportunity, which came when the " Brooklyn " left her station to close a suspicious sail, the " Sumpter " on 30th June made her escape. It was a near thing ; on the first leg to the south-eastward both ships were able to proceed under sail and steam and the " Brooklyn " overhauled her adversary in a squall ; but the " Sumpter " escaped by shortening sail and steaming to windward.

Her first prize was captured and burnt on 3rd July off Cape San Antonio ; the next day she captured two more and entered Cienfugos on 6th July with four more collected off that port. The following day she sailed for Curacoa, arriving on the 17th. In spite of pressure on the Dutch authorities by the United States Consul, she remained there for a week and then made for Port of Spain, in Trinidad. On the way the " Abdy Bradford " was captured. After an unsuccessful attempt to lodge that ship at Puerto Caballo, she was sent back to New Orleans under a prize crew. Captain Semmes' object was to reach the focal zone off Cape San Roque ; but to do so he required coal, and coal he could not get ; H.M.S. " Cadmus " was at Port of Spain, and the rules of neutrality were preserved ; he had no luck at Cayenne, and eventually he had to return to Paramaribo, where he got his coal despite every

effort made by the U.S. Consul to prevent it ; first by buying up all the coal, then all the lighters, and finally by engineering a strike amongst the coal heavers. However, the "Sumpter" got her coal in the end and reached Maraham on the 6th September. But there her captain finally abandoned the idea of operating off Cape San Roque, and turned back to the north-westward. As a result he had a very lean haul—only two ships in fifty-seven days despite the fact that he commissioned one of them as a scout to double the extent of his horizon. Eventually he made Port of France, in Martinique, on 9th November.

Three ships, the " Keystone State," the " Powhattan " and the " Iroquois," were sent in chase of the " Sumpter." The " Keystone State " was ordered from Philadelphia to escort the Californian packet through the Windward Passage, to coal at Kingston, Jamaica, touch at St. Thomas, and return through the islands via Havana to Key West. (Very similar orders were given to the French cruiser " Condé " when searching for the " Karlsruhe " in 1914.) Actually the " Keystone State " cruised in the Windward Passage for several days without falling in with the Californian packet, and then proceeded on her way as ordered. She reached Port of Spain only eight days behind the " Sumpter," but instead of pursuing to the eastward her captain turned back according to his orders, pleading that he had no news to guide him.

The " Powhattan," while on blockade duty off one of the mouths of the Mississippi, chased and captured the " Abby Bradford "—the " Sumpter's " prize, on her way to New Orleans. From her, Captain Porter obtained a certain amount of information about the "Sumpter's" intended activities and obtained permission from his Flag Officer to go in chase. His information was good and his deductions were sound, so that he followed his quarry from port to port, gaining rapidly until he was only five days behind at Maraham. He next called for news at St. Thomas', but although the tracks look close enough on the map, the ocean is large and the two ships were never within hundreds of miles of each other. Porter was acting on the assumption that Semmes would return to his prizes at Cienfugos.

The " Iroquois " left Hampton Roads on 3rd September with orders to search the Antilles and make the best use of information available. At St. Thomas he learned the " Sumpter's " movements up to the 4th September, and set off to Paramaribo in pursuit. He was back at St. Thomas on the 11th and, while still coaling, on the 12th heard that the " Sumpter " had been at Martinique since the 9th. He sailed at once and found her there on the 14th. The " Iroquois " arrived at 2.30 p.m., and at 1.30 a.m. the following morning hove close alongside her adversary. There was huge excitement in the town, where it was

thought the battle would begin at any moment. The captain of the "Iroquois" did not admit belligerent rights to a rebel, and stated that it was only the position of the "Sumpter" with regard to the town that restrained him from opening fire. At 7.30 a.m. the French sloop "Acheron" arrived on the scene with orders to enforce respect for neutrality. The "Iroquois" did not anchor in case the rule requiring her to sail twenty-four hours after her adversary should be applied to her; instead she blockaded the bay and made arrangements for an American schooner to watch the "Sumpter" and signal her movements. Semmes waited a week and tried his luck on the night of the 23rd–24th, but no sooner had he slipped his moorings than an uproar like babel broke out in the port. Nevertheless he escaped, by luck and a providential rain squall, and the Captain of the "Iroquois" lost his job.

The "Sumpter" crossed the Atlantic in very bad weather and only made three prizes during her passage. This was largely due to the effect of panic—that most powerful weapon of commerce destruction, which consigned the majority of American cargoes to neutral bottoms. She touched at Cadiz on 5th January, 1862, and proceeded to Gibraltar, where she made two more prizes in the Straits. Difficulties about the supply of coal kept the "Sumpter" at Gibraltar until the arrival of the Federal cruiser "Tuscarora" from England on 12th February, which ship anchored off Algeciras to maintain a blockade which lasted nearly a year. The "Tuscarora" was relieved by the "Kearsarge," and later by the "Chippewa." On 12th April, it was announced that the boilers of the "Sumpter" were worn out and could not be repaired in a neutral port; but still the blockade continued. On the 20th December her sale to an English firm was announced, but was not recognized. Finally, on the 6th February, 1862, the ship, now renamed "Gibraltar," made her escape.

The third and last ship in the Confederate Navy was called the "Nashville." This little ship made her first voyage unarmed to run the blockade and transfer two Confederate delegates to Havana, whence they were to take passage to England in a British ship. On return she was armed as a commerce raider and sailed on 21st October, 1861, to Southampton, capturing and sinking a three-masted ship, the "Harvey-Birch," on her way. This incident created a tremendous impression in New York, sailings for Europe were suspended and insurance rates soared. The Federal Government dispatched the "Tuscarora" in pursuit with orders to call at the Azores on the way. The "Tuscarora" anchored off Cowes and would have remained indefinitely, despite the fact that she was required at Gibraltar to deal with the "Sumpter." However, on the 3rd February, 1862, the "Nashville" sailed, escorted

by a British frigate, and 24 hours later the "Tuscarora" was free to proceed to Gibraltar and blockade the "Sumpter." The "Nashville" transported a cargo of arms and munitions to Beaufort. Later in the year she was sold as a blockade runner and carried out a very famous voyage when she transported twenty-two Russian guns captured at the battle of Inkerman and subscribed for by a syndicate of business men in England. She was eventually destroyed by the Federal monitor "Montauk" near Fort MacAllister on 27th February, 1863.

The cruise of this ship, despite the almost total lack of any material result, had an enormous repercussion upon public opinion. Ships were held up at New York and Gibraltar and petitions circulated the States demanding the resignation of the Minister of Marine. (A similar panic occurred in 1914, and was only relieved by the appearance of Admiral Craddock off New York on the 11th August.)

The Third Phase—External Aid

In view of the feeble resources available in their own ports, the Confederates took steps to have suitable ships built abroad and armed secretly for use as commerce destroyers. Although five ships were voted, only two were ever built. The Confederate agent in England was Commander James D. Bullock. He landed at Liverpool on 4th June, 1861, and set to work to study the possibilities of evading the Foreign Enlistment Act. It appeared possible to build a ship in England for the use of a belligerent Government provided that the parties responsible for her equipment had no intention of her undertaking any hostile act. This interpretation of the law was later to cost England dearly. Bullock was closely watched by Federal spies, but he was able to act through the agency of subordinates. In order to keep within the law, he built the ships and sent them to a rendezvous without guns, small arms, ammunition or stores, and when everything was ready these were sent in a transport. There were initial difficulties in obtaining the crews, but they were gradually made up from the prizes captured. The majority were foreigners—principally English, but so in fact were the crews of the Federal Navy. The financial situation was more difficult still, but generally speaking credits were obtained in Liverpool from the sale of cotton and placed to the account of the Minister of Marine. After January, 1863, Bullock was permitted to buy the cotton himself from the blockade runners, paying for it in the paper money of the Confederate States; but on the whole it was lack of cash that limited the number of cruisers to two. These two were the "Alabama" and "Florida."

Built by Messrs. Lairds at Liverpool, the "Alabama" was a small,

fast barque-rigged wooden vessel of 1040 tons and 600 horse-power. She carried a crew of 120 men, one 7-in. rifled gun, one 8-in. smooth-bore pivot gun, and twelve 32-pdrs. Her fuel capacity was 350 tons of coal. Every effort was made by the United States Ambassador to have the vessel seized, and the Customs officers were actually on their way to Liverpool when she sailed on what was ostensibly her trial trip. The illusion was intensified by a large party of ladies who were entertained on board until a steam tug came alongside and took them all ashore. The ship dropped down the river on the night of the 30th July, 1862, and the next day she was clear away at sea. It seems incredible in these days of rapid communication that she could have been allowed to escape if there had ever been any real intention of stopping her. The Federals own effort was equally futile, for their frigate, the "Tuscarora," arrived in the Mersey two days too late.

The "Alabama" made for the island of Terciera, in the Azores, where she was joined by the "Agrippina" with a cargo of guns, ammunition, coal and stores, and the "Bahama," with Captain Semmes and the other officers late of the "Sumpter." She completed her fitting out in the shelter of the island and made up her fighting crew from volunteers from the three ships; only eighty men joined, and they struck a hard bargain before they would consent to do so. Their rates of pay are recorded as £4 10s. per month for seamen, £5 and £6 for petty officers, and £7 for firemen. It is of interest to note how profitable was the "Alabama's" subsequent career as a commerce destroyer while she was working in the focal zones in the North Atlantic off the Azores and in the South Atlantic off Cape San Roque, and how unprofitable by comparison was the remainder of her cruise. This is the common experience of all commerce raiders.

Semmes began by capturing and burning ten ships, of which the crews were landed at Flores. Driven from this station by storms, he turned to the main trans-Atlantic route off Newfoundland. The first ship captured, the "Emily Farham," carrying neutral cargo, had to be released, and gave the first information of the activities of the "Alabama."

A month previously the "Florida" had announced her existence by running through the blockading squadron off Mobile. This time the panic knew no bounds. Not only were the commercial gentlemen affected, but the whole coast-wise population were in terror of raids and demanded that guns should be mounted everywhere. To meet the menace, Rear-Admiral Wilkes with a flying squadron of seven ships was sent to the Antilles. His particular directions were:—

(1) To destroy the raiders.

(2) To observe strictly all neutral rights, especially with the stronger Powers.

(3) To protect commerce.

His ships were badly found, and it was only after a long delay that he got them to sea.

A few weeks later, learning from a newspaper that her whereabouts was known and steps were being taken to pursue her, and also because of contrary winds, the "Alabama" went South, capturing nine ships on her way. One of these, a liner with a large number of passengers on board, was released, but a ransom of 80,000 dollars was levied, to be paid on the conclusion of peace. On the 18th November the "Alabama" arrived at Martinique and started to coal from the "Aggrippina." The next day the Federal cruiser "San Jacinto" appeared. Fearing a repetition of the escape of the "Sumpter," Admiral Lee posted watchers on board an American brig in the harbour and arranged for two boats to patrol the headlands on either side of the bay. The "San Jacinto" remained under way in the centre of the bay, having been warned by the French authorities that he must either come in and anchor or remain outside the three-mile limit. The night was dark, and, despite her being signalled as soon as she slipped her moorings, the "Alabama" had the luck to escape without being sighted. Once clear, she proceeded with all speed to an island called Blanquilla off the North coast of South America where she once more met her faithful collier.

Semmes now decided upon the adventure of attacking the Californian Packet in the Windward Passage, but after six fruitless days in the channel and after passing twice through the Mona passage, he was about to leave this dangerous station when a large ship hove in sight. She proved to be a packet and she was chased and captured, but she had to be released owing to the large number of women and children on board, with a promise that the company of Marines would not again bear arms against the South. A ransom of 200,000 dollars was also levied, but of course was never paid. (A similar situation occurred in 1914, when the "Dresden" was forced to release three British ships carrying neutral cargo, having made their crews promise not to bear arms against the Germans.)

It is remarkable that the Federal Government did not maintain a patrol in the Mona and Windward passages, but if the truth be known Admiral Wilkes was displaying more energy in quarrelling with the British and more industry in the lucrative business of capturing blockade runners than in the barren process of patrolling the high seas.

After this exploit the "Alabama" disappeared into the distant fastnesses of the Mexican gulf to refuel and reprovision. Semmes now

decided upon a military operation which took the form of intervening in the attack on Galveston, then taking place. He approached that port in the late afternoon in the hopes of being able to locate the troop convoy and attack it after dark. Owing to the bad look-out kept by his masthead man, he was sighted first by the blockading squadron and chased by one of their gunboats, the " Cape Hatteras." Proceeding under easy steam the " Alabama " was successful in luring her away out of sight and sound, despite the fact that the Captain of the " Cape Hatteras " was almost certain of the identity of the strange sail. The engagement took place after dark and the " Cape Hatteras " was sunk, with small loss to either side. The " Alabama " then landed the prisoners at Kingston, Jamaica, and returned to her proper role of commerce destruction in the broad Atlantic. (Here we are reminded of the " Emden's " attack on Penang.)

Cruising between the 21st February, 1863, and the 4th March in the focal zone South of the Azores, she captured seven ships. Then she went South to the Cape San Roque zone, where she made several more prizes, amongst them one loaded with coal. She tried to coal at sea without success and took her prize to the island of Fernando de Noronha. Thence she went to the Cape of Good Hope, calling at Bahia on the way, where she met the " Georgia." The " Alabama " anchored in Saldanha Bay on 29th July, 1863. She operated with a certain amount of success in the neighbourhood of the Cape until September 24th, when she started across the Indian Ocean. A fruitless cruise of six weeks brought her to the Sunda Strait, where she was informed by a neutral of the presence of the Federal cruiser " Wyoming." Although Semmes was looking forward to a scrap to relieve the monotony, they passed through the Strait without sighting the enemy, but destroyed four prizes on the way. A cruise West of Borneo having yielded nothing, the " Alabama " anchored on 3rd December at Pulo Condore, where the French Governor gave all facilities for reprovisioning at his disposal.

The absence of the " Wyoming " was explained by her undertaking a cruise to Christmas Island two days before the " Alabama " arrived (a common error in commerce warfare). After this contretemps she rightly decided to wait for her quarry in the Singapore Straits, but on the 9th December her engines broke down and she went to Manila to get them repaired. Three days later the news reached Singapore that the " Alabama " was at Pulo Condore. On the 21st December she arrived there to find twenty American vessels immobilized in the port. She remained for three days only and then began her long journey back across the Indian Ocean, round the Cape and so to Cherbourg, France, where she arrived on the 11th June, 1864. Semmes' original intention

was to refit his ship in the dockyard and negotiations to that effect were on foot. However, three days later his old enemy the " Kearsage " appeared in the entrance, steamed slowly across the outer harbour and went out again. This challenge was accepted and the " Alabama " prepared for battle. The contest took place on the morning of the 19th June, in full view of the inhabitants of Cherbourg. The two ships were evenly matched, but the " Alabama " was sunk after fifty minutes fighting. The " Kearsage " had the advantage of speed and kept her distance, with the result that the two ships circled round each other like dogs. Captain Semmes and sixty survivors were rescued by the English yacht " Deerhound " and landed in England. The British Government refused to give them up. The casualties were 47 killed and wounded in the " Alabama," and 3 men wounded in " Kearsage." The news of this Federal victory made more stir than many battles of the campaign ashore.

Although the " Alabama " has gone down to history as the great commerce destroyer of that war, the destruction she wrought was not greatly in excess of that of the " Florida." The " Alabama " sank 65 vessels and the " Florida " and her consorts 57.

The career of the " Florida " as a commissioned ship began at Mobile on 16th January, 1862, and ended at Bahia on 5th October, 1864. She spent the whole of this period in the Atlantic except for a period of five and a half months refitting at Brest. This alone is a remarkable performance, and one must once more stress the tremendous effect, apart from the actual destruction of prizes, made by an active and persistent raider upon the commercial interests of her enemy. The " Florida " was captured in the neutral port of Bahia by the Federal " Wachusset," despite the fact that a Brazilian corvette was anchored between the two ships to keep the peace. The attack was deliberately and audaciously carried out by boarding while the Captain and part of the crew of the " Florida " were ashore. The prize was towed out of harbour from under the guns of the forts and eventually taken to Hampton Roads. Of course the diplomatic exchanges which followed were terrific, and it was eventually agreed to return her, but while the talk progressed she was allowed to sink at her moorings !

There were many similar examples to prove that a dangerous commerce raider will fail to escape destruction if caught in the harbour of a weak neutral Power. We have seen how Captain Semmes escaped twice from Martinique, although the French had only a small gunboat to protect their interests ; but with a weak neutral it is invariably a different story, as, for example, the Russian " Rieshititelny," in the Chinese port of Chefou ; the German " Dresden," in the Chilian port of

Mas-a-Fuera; the German "Markomania," in Dutch waters off Simolaer; the German "Kaiser Wilhelm," in Spanish waters at Rio de Oro; the German "Cap Trafalgar," in Spanish waters at Trinidada; and the British submarine "E13," in Danish waters.

After the destruction of the "Alabama" some of her surviving officers and men, in 1864, manned the "Shenandoah." The particular mission of that ship was the destruction of the Pacific whaling fleet in the Behring Sea; this in due course she accomplished. Unfortunately, owing to the absence of news, the act took place a couple of months after the war had come to an end, and it caused much irritation at an unfortunate time for the South.

It is estimated that the war losses of the North amounted to about three hundred ships, totalling 120,000 tons, and representing in value over £5,000,000. It is impossible to assess the losses caused by demurrages, by high insurance rates or by the transference of trade to neutrals. Ships which would otherwise have been immobilized were sold to neutrals, the total for the five years being in the neighbourhood of 800,000 tons. In 1860, two-thirds of the trade of New York was carried in American bottoms; by 1863 the proportion was reduced to one-fourth. The Government of the United Kingdom was held responsible for the loss of the 241 ships which were sunk by Confederate cruisers built in England. In 1872 the arbitration court at Geneva assessed the bill at £3,510,000. It was proved that England had not fulfilled her obligations with sufficient energy under the Foreign Enlistment Act and the declaration of neutrality, (*a*) by preventing the arming and equipping of ships which were suspected of taking a part in the war; (*b*) by denying the use of ports and territorial waters for the replenishment of ammunition, stores, provisions and men by belligerent ships.

Severe as was this shock to our tax-payers in those days, there can be no doubt that the judgment has reacted ultimately in our favour. In the first place, the 'Stars and Stripes' were eliminated from the carrying trade of the world and we were soon recompensed financially; but, what is far more important, the American principles of neutrality were established on a solid basis, and we could rest assured that, in any future conflict, American ports would be closed to the ships of a belligerent seeking to destroy our trade.

The counter-measures of the Federal Government were successful in so far as the blockade of the Southern Coast, the occupation of bases, and the suppression of privateering were concerned; but they were entirely unsuccessful in dealing with commerce raiders on the high seas. A prodigious effort was made, amounting in 1864 to 68 ships and 12,320

men, but it only resulted in the destruction of four raiders out of twenty-five that were armed. It is remarkable that three of these ships should have met their end in neutral waters.

On the occasions when Confederate vessels made an appearance off the coast, the Federals armed and sent to sea every ship that they could lay hands on. During the raid of June, 1863, forty vessels were fitted out within forty-eight hours, some with no more than a couple of guns and some small arms on board; but the raider in this case was a tender of the "Florida," called the "Clarence"—a bad sailor whose crew transferred the next day to the "Tacony," and it was known that she could have no guns. The crew transferred twice more before they were captured in a calm. On subsequent occasions when the Confederate cruisers were reported on the coast, similar arrangements were made, but it was never possible to provide more than a dozen ships with sufficient armament to take them on, and they were never brought to action.

In general, the Federal strategy consisted of a fruitless patrol of the trade routes, and the orders given to the various ships allowed them plenty of latitude to exploit any news that they could get. But the news they got was nearly always stale, and they spent most of their time chasing false scents in the wrong direction. On one occasion an attempt was made to convoy the Californian packet, but the man-of-war supplied for the purpose was so small and slow that in the end the Californian packet took her escort in tow.

The counter-measures generally followed the same lines as the British defence of trade in 1914–18, viz:—

(*a*) Defensive armament of merchant shipping.
(*b*) Evasive routeing and patrol of local areas.
(*c*) Convoy (as applied to Californian packets).

Conclusions and Lessons

From the point of view of the raider, the first essential is to have a very great radius of action in order that she may operate for a long period out of sight of land and without anxiety for the replenishment of her fuel. It is evident that these conditions were fully met by the sailing ships fitted with auxiliary steam: their sailing gear was robust and could be repaired on board; under sail, their radius of action was only limited by the health of the crew; under steam, they had the speed required to effect the capture of a sailing ship or to escape from a man-of-war. In view of the exploits of the "Seeadler" in 1916–17, it seems probable that we have not seen the last of the auxiliary sailing ship as a raider.

The second essential is the importance of attacking your enemy at the focal points of his trade routes, where the density of his shipping will ensure a profitable result.

The third essential is that your enemy should not be left in ignorance of your attacks, but should have no inkling of where the next blow will fall. The damage to trade caused by actual captures or sinkings does not compare with the damage caused by suspension of sailings, increase of insurance rates and dislocation of trade caused by uncertainty and fear.

Information is of importance, and newspapers captured on board prizes and the employment of captured ships for look-out purposes may be as useful in a future war as they were in the American conflict. From the point of view of the defence, information is of the first and most vital importance. Confidence must be established ashore, and for this reason a certain measure of publicity is essential. It is not likely to deter seamen from facing the risks of going to sea.

The raider must be sought on his most profitable hunting grounds, i.e., the focal areas, or those areas must be made too dangerous for him. It is futile to patrol a trade route, whether from the point of view of preserving the morale of shipping companies or of the chance of falling in with a raider. Raiders may often be found in neutral harbours or near a landfall: many naval encounters, it may be noted, are named after some cape.

The radius of action of a modern cruiser is a function of fuel capacity and the maintenance of machinery. For the latter overseas bases are required. A ship employed in patrolling the ocean empty of an enemy is merely wearing out her machinery to no purpose. Equally it is courting disaster to send badly-armed ships in search of a well-armed raider.

No system of blockade can be absolutely counted upon to prevent the escape of a raider.

Finally, the collection of intelligence and the control of operations against raiders should be invested in a command ashore.

THE SELF-DEFENCE OF MERCHANT SHIPS IN WAR

By COMMANDER J. CRESWELL, R.N.

On Wednesday, 17th November, 1937.

VICE-ADMIRAL SIR H. J. STUDHOLME BROWNRIGG, K.B.E., C.B., D.S.O., in the Chair.

THE CHAIRMAN, on introducing the Lecturer, said that he was a submarine officer during the War, and since then he had been a lecturer at the Staff College; he had written a book on naval warfare, and during the last six months had held an Admiralty appointment in connection with the Defence Courses for Merchant Navy officers.

LECTURE.

THE title of this lecture, you will have noticed, is the *self* defence of merchant ships. There have been times in the past when it would hardly have been necessary to emphasise that limitation: if a merchant ship in the Middle Ages, for example, could not put up her own defence, she had no other security; there might have been some police work by the King's ships in the Narrow Seas, mainly for the benefit of the coasting trade, but oversea traders had to look to their own devices. They might sail in company for mutual protection, but arrangements of this sort would be entirely the affair of the merchants and the ship masters. As time went on, however, the warships of enemy states began to take a hand in the attack on trade—they took a hand, that is, in what had previously been the business of private warships and pirates. As these regular warships became more and more specialised for war they grew to be considerably larger and infinitely more powerful than the merchantmen. And so in time the Royal Navy had to play its part in defending oversea traders who could no longer defend themselves.

By the XVIIIth Century a general system of trade defence was well established. That system was, of course, that the ships on any particular route should be collected together and convoyed by warships. Sometimes the escorting warships might be sufficient to drive off the enemy's main fleet; but as a rule interference from the enemy's main forces was prevented by the cover afforded by our battle fleet. The escort provided would then be whatever was needed to drive off isolated warships or small squadrons such as might have eluded our covering forces. An escort that could drive off enemy frigates was naturally ample protection against privateers, and so it might be thought that there was no longer any call for merchant ships to be armed for their own defence; but

that was not the case: although by taking convoy it was possible for an unarmed merchantman to pursue her voyage in safety, there was always the mischance of parting company with the convoy to be considered. There was also the fact that convoy was then, and probably always will be, somewhat irksome to commerce because of the delays that it causes. Because of that, many ships were prepared to take the risk of sailing independently. So there were still reasons for some, at all events, of the merchant ships to arm themselves. They would not be able to stand up to frigates, but enemy frigates were probably few and far between and there were good chances of completing a voyage without sighting one. The chief anxieties of trade lay with the far more numerous privateers, and a privateer might well be driven off by an armed merchantman. Some privateers carried considerable gun armaments and might be difficult to stave off; but the majority relied on large crews and boarding rather than gunnery, and some were mere open or half-decked boats. Such as these a well-armed merchantman could no doubt keep at a distance.

To show the attitude of the XVIIIth Century to this matter, it will perhaps be of interest if I state briefly what was done with regard to arming merchantmen when war with Revolutionary France broke out in 1793. On 11th February, of that year, an embargo was placed on all British merchant vessels in port "until the naval preparations now carrying on shall be sufficiently advanced to afford them adequate protection." I gather that that was a polite way of saying "until the Royal Navy has taken all the men it needs out of the merchant ships." Then ten days later an Order in Council was issued authorising merchant ships to arm in their own defence. Each ship had to obtain an Admiralty Licence to carry arms, as required by the Smuggling Act. Having done this and bought her arms and ammunition (at the ship-owner's expense) she could then apply to the Customs Authorities for permission to sail without convoy. Unarmed vessels were held up by the embargo until convoy could be provided. The scale of armament laid down by the Order in Council was one carriage gun or swivel for every 10 tons burthen. The average West Indiaman of that time was perhaps 300 tons so she would have had to carry 30 guns. But it was soon found that on this scale the demand for guns would far outrun the supply, so a week later the establishment was reduced to two-thirds, and in a further ten days to only one-third, of the original scale. In other words, a 300-ton ship would be called on to mount ten guns.

Five years later, in 1798, a Compulsory Convoy Act was passed and the mere possession of a certain scale of armament was no longer sufficient warrant for sailing independently. But it was still possible to

obtain an Admiralty licence to sail without convoy. There were, in fact, a large number of these " running ships " as they were called. Presumably fitness to hold a licence to " run " depended partly on armament and partly on speed and weatherliness. Although these were Admiralty licences, it seems that Lloyds underwriters kept a watchful eye on them, for one reads that in 1804 Lloyds procured the withdrawal of licences from a number of West India ships not considered worthy to hold them. " Running " ships were free to sail by themselves, but it was often arranged that two or three should sail in company. No doubt the mutual protection afforded in that way was a great help.

Just what effect the armaments of these merchant ships had on their safety it is difficult to say. Probably they acted mainly as deterrents without being called into play. No doubt a French privateer would sometimes sheer off from a ship that was armed, preferring to tackle something with no sting in its tail. But sometimes the privateers attacked and some sharp actions resulted The most heroic fight recorded is that of the Post Office packet " Windsor Castle " in 1807. While on passage to the West Indies, she was attacked by a schooner privateer more heavily armed and with more than three times as many men, and she not only beat off her assailant but actually captured her after a hot action.

I must not leave the self-defence of merchant ships in the French Wars without some mention of the East Indiamen. These were few in number but very large—three or four times the size of the average oversea trader, in fact as big as frigates or even small line-of-battle ships. They were always armed, and on account of this and their size had little to fear from privateers. But they were no match for frigates, and were therefore usually convoyed when attack by frigates was possible. However, escorts were not always available and the gallant action fought by Commodore Dance of the Honourable East India Company's service is one which will always be remembered. Dance was senior officer of sixteen Indiamen homeward bound from Canton. Off the East coast of Malaya he fell in with a French squadron comprising a " seventy-four," two frigates and a corvette. This was in the afternoon. Dance not only formed line of battle but lay-by all night showing lights. This lack of attempt to escape convinced the French Admiral that some of the sixteen must be warships and this impression was confirmed on the following morning when he saw that three of the British ships were wearing Blue Ensigns which were at that time the colours of the East Indies Squadron. A brief action ensued which was so well fought by the Indiamen that the French soon hauled off and were even chased for two hours. It might perhaps be suggested that with

sixteen Indiamen opposed to only four warships the disparity of force may not have been great. But it was the contemporary opinion that, had the French Admiral realized the situation and pressed his attack, the merchant ships' armaments would have been of little avail and many of them must have been captured. Dance's action was, in fact, a fine example of what can be achieved by resolution and a bold demeanour.

In the century that followed the Napoleonic Wars there were two matters which had an outstanding effect on the defensive armament of merchant ships. One was, of course, the change from sail to steam: the other was the Declaration of Paris. The Declaration of Paris was signed in 1856 and affirmed in its first clause that privateering was abolished. It might therefore have been supposed that there was no longer any call for merchant ships to be armed. Evidently they could not defend themselves against the regular warships of that time, and privateers need no longer be considered. But just over fifty years ago, in 1886, a lecture was given in this Institution by the Captain of a Mail Steamer on the New Zealand run, and in his lecture he put forward the plea that ships such as his should be defensively armed. The main premise of his argument is interesting, and reads rather curiously nowadays. It was that at that time there were " very few men-of-war afloat that in war time could afford the time and coal expenditure necessary to catch a 14-knot merchant steamer " such as his was. This was confirmed by several naval officers in the discussion that followed. It was a state of affairs in marked contrast both to the old days when a frigate could overhaul a merchant ship with the greatest of ease, and to-day when there are few liners that can come within 5 knots of the speed of a cruiser. From this premise the lecturer, Captain Crutchley, argued that a defensive armament would discourage an enemy warship from pursuing an already hopeless chase, and that, beyond that, all his ship would have to contend with were liners converted into cruisers —what we now call armed merchant cruisers. These, with hulls as susceptible to damage as his own, he was prepared to resist if he was given guns to resist with.

Although Captain Crutchley's views seem to have been well received, nothing was actually done until 1913. By then, of course, it seemed probable that Germany would be the future enemy, and it was believed that German preparations included the arming of a large number of liners to attack our trade. These liners would probably carry their guns stowed below in peace time and would at once mount them on the outbreak of war, even if they were at sea at the time. With the probability of widespread measures of this sort, carried out by ships not very heavily armed and very vulnerable to shell fire, it seemed worth while

for our merchant ships to resist their attacks. It was, of course, the duty of the Royal Navy to prevent such attacks taking place, but we had not sufficient ships to ensure intercepting all these raiders before they could do damage. Steps were therefore taken, and by July, 1914, thirty-nine liners had been armed with two 4.7-in. guns each. Both these guns were mounted right aft which made it clear that they were intended only for defence. That before the late war broke out some of our merchant ships were defensively armed is a fact which, I think, some of us may have forgotten and one which is interesting to remember. Unfortunately they had not been supplied with ammunition in peace time and there was therefore some delay in putting ships which were abroad when war was declared in a position to defend themselves. But the fact that they already had guns was an important step in the right direction.

Great-War Measures

When war broke out orders were at once given for a further forty of our more valuable ships to be armed in their own defence; but this policy of defensive armament could not be made as effectual as we should have liked, for it was soon afterwards decided that no armed merchantmen could be employed in trading to United States ports. With this discouragement only ten more ships were armed by the end of 1914. The reason for this state of affairs was that the United States had interned a large number of German liners on the grounds that if they were allowed to sail they would at once mount their guns and act as warships. It therefore seemed incongruous to the American authorities that our ships should be constantly going in and out of American ports with guns already mounted. There was, of course, no doubt of the right of our ships to do as they were doing; but with the majority of German liners interned, the threat against which our ships were armed was much diminished. We therefore considered it best to do without guns in ships trading to the United States rather than to enter on a dispute which might lead to the German ships being released. But we did not relinquish our right to arm all merchant ships in self-defence if we wished to do so.

A really urgent call for the arming of all merchant ships was not long delayed; for no sooner had the seas been cleared of German armed merchant cruisers than we were confronted with an entirely new form of attack on trade: attack by submarines. With this it seemed that we had arrived at conditions which in some respects took us back to privateering days. Here was a vessel being used for attack which in a surface action an armed merchantman could successfully resist. Such resistance could not counter submerged attacks, but at least it would

to a considerable extent deprive submarines of facilities to destroy ships by gunfire or, if they were entirely defenceless, by boarding them and placing internal explosives. It therefore became a matter of urgency to mount guns in all merchant ships. Lack of preparation for such extensive measures made the achievement of this policy a slow affair. In the Eastern trade, for example, it was necessary at first to dismount the guns of eastward bound ships at Port Said so that they might be transferred to ships bound homeward; but the policy of arming all ships went steadily forward, and by September, 1915, it had also been found possible to persuade the United States to allow defensively armed ships to use American ports. By the end of 1916 nearly 2,000 guns had been mounted, and by the end of the war nearly every merchant ship had been provided with a gun. The number of ships actually mounting guns at the time of the Armistice was 4,200. Beyond that a further 1,600 guns had been mounted in ships which had subsequently been sunk.

The right of a merchant ship to resist capture cannot be denied. It is also the right of the Master to decide whether or not he will resist. It cannot be said that it is his duty to resist if resistance will only lead to casualties without giving any real chance of success; but successful resistance by a merchant ship undoubtedly calls for universal admiration and one hopes leads to substantial rewards. However, the decision to resist will not depend only on the chances of success but also on the results of the alternative course. What will happen if the ship is surrendered? In the old days there was in the first place quite a good chance of subsequent recapture; failing that there was the prospect of an enemy prison with the possibility of being exchanged, or there might even be repatriation with delay. But the German submarines changed all that; surrender meant that all hands would have to take to the boats, whatever the weather and however far from land. With such a prospect the arguments for resistance were necessarily increased. In fact, things were much on a par with the days when the assailants were cut-throat pirates or Barbary Corsairs who condemned their captives to the galleys. The self-defence of merchant ships had willy-nilly taken on a new importance.

As more and more merchant ships were armed, it soon became clear that the old form of defence would have a marked effect on the new form of attack. A ship with a gun could defend herself successfully against a submarine that attacked on the surface. This was shown in many gallant actions. At first only small guns could be provided, and these were often sadly outranged; but by turning stern on to her assailant, and by using smoke-producing apparatus so as to envelop herself in an artificial fog the merchant ship made things more difficult

for the submarine, and it often failed to get a hit before coming within range of the merchant ship's gun ; and when her quarry could reply, the submarine was seldom anxious to risk damage. Under these conditions it usually sheared off and, perhaps, dived out of harm's way. As time went on, longer range and more efficient guns were supplied to merchant ships, and these contests became less uneven. A particularly fine example of self-defence occurred in December, 1915, in the Mediterranean. The " Torrilla," a troop transport of 5,000 tons, sighted a German submarine. She endeavoured to escape, the submarine chasing her and firing at her. As the " Torrilla " was armed with only a 3 pdr., the submarine easily outranged her, and things looked black. A wireless call for assistance had, of course, been sent. Unfortunately there were no warships at hand, but the " Benalla," an 11,000 ton P. & O. steamer, also with troops on board, was not far away. Though it was, in general, the perfectly correct practice for a merchant ship to steer as far clear as possible of all enemy submarines, the Captain of the " Benalla " did not hesitate. He was armed with a 4.7-in. gun and considered that he could aid a comrade in distress. He therefore immediately made for the scene of the engagement and brought his gun into action at a range of 8,000 yards. After the third round the submarine submerged and both ships proceeded safely on their voyages.

Perhaps the best idea of the general effect of defensive armament as a counter to the attacks of submarines is given by the figures for the year 1916. During that year, and the first twenty-five days of 1917, the numbers of armed and unarmed ships attacked were very nearly the same—310 armed and 302 unarmed. But of the 310 armed ships attacked, 236 escaped ; whereas of the 302 unarmed ships, only 67 escaped.

Guns mounted in merchant ships were not, and never can be, a complete answer to submarine attack on trade. What they did was to compel the submarines to attack submerged. This drastically limited both the destructive radius of each submarine and the number of ships she could sink before returning to harbour ; for when attacking submerged she could only sink one ship with each torpedo and only a few torpedoes could be carried at a time. The reason that what one might call the destructive radius of each submarine was limited was that, for submerged attack, a submarine must be fairly fine on the bow of her quarry at the start of the attack : this, of course, is because the effective submerged speed of a submarine when attacking is very low. So if she is not fine on the bow at the start of the attack she will not get close enough to give her torpedo a good chance of hitting. If she is nearly on a ship's beam when she sights her she will never get within

range. Even when a German submarine started in a favourable position for attacking she did not always score a hit, and if she missed she could not repeat the attack submerged; she could only come to the surface and use her gun. Here again the merchant ship's gun came in. To take just one example: in July, 1917, the S.S. "Benguela" sighted the track of a torpedo which missed the ship by twenty or thirty yards. Half an hour later a submarine came to the surface right astern. The submarine opened fire and steered a somewhat divergent course so as to bring both her guns to bear. To frustrate this the "Benguela" kept on altering course so as to keep the submarine right astern. This had the effect of making the submarine chase to avoid dropping out of range, and this deprived her of the use of her after gun. Most of the time the "Benguela's" gun was outranged, but from time to time the submarine came within range and when she did so she received a vigorous reply. After six hours of this the "Benguela" scored a hit and the submarine sheered off. The submarine had fired about 250 rounds, but had only hit the "Benguela" once.

But the combination of anti-submarine patrols and the defensive arming of merchant ships was not an adequate reply to the German unrestricted submarine warfare, and the convoy system had to be introduced. The revival of this old system of defence achieved a remarkable success under the new conditions; in fact it saved Great Britain and the Allied cause. As this lecture is only concerned with the self-defence of merchant ships, the convoy system will only be touched on so far as it effected that subject. It might be suggested that merchant ships in convoy with warships guarding them would no longer need to be armed; but, even though the convoy system became more and more thoroughly organized and merchant ships became more and more adept at playing their part, there was always the possibility of their losing touch with the convoy in fog or bad weather, and there were always some passages which had to be taken without escort—coastwise voyages in ballast, for example, or passages to convoy assembly ports or from convoy arrival ports to the final destination. So it continued to be the policy that all merchant ships should mount guns, and so intensive did submarine warfare become that they were also given the means of striking at any submerged submarine which was known to be close at hand with howitzers and bomb throwers firing projectiles which burst under water. In addition, depth charges were supplied to certain ships which were stationed in the rear position in convoys so that they could be dropped near any submarine that attacked the convoy at close range.

The Future

From 1918 we pass to the present and the future. The latest development is the inauguration of Merchant Navy Defence Courses. These aim at giving officers of that Service some instruction in the problems they may be confronted with in war. They deal with all the methods by which sea-borne trade is defended in war, not merely with self-defence; but self-defence necessarily plays a considerable part in the courses, for it is evident that instruction in what they can do for themselves must be of the greatest value.

It is a little difficult to enumerate each and all of the types of attack our merchant ships may be subjected to in a future war. Many nations have signed the Submarine Protocol, which forbids submarines to sink merchant ships without paying proper attention to the safety of their crews; and some nations have signed a similar declaration regarding aircraft. It is hoped that all belligerents will adhere to these agreements, and that our enemies in future wars will be loath to incur the odium of repudiating their signatures. Apart from the moral aspect, perhaps they will remember that it was really Germany's declaration of unrestricted submarine warfare in February, 1917, that lost her the War, for it was that campaign which brought the United States in on the side of the Allies and tilted the balance in our favour. Yet the events of recent years have made it only too plain that we would be wrong to put complete reliance on signed declarations. There is obviously a possibility of our merchant ships being again attacked on an extensive scale, not only by submarines but by aircraft as well. In staving off these attacks self-defence may play an important part. If such attacks threaten, merchant ships will undoubtedly again be armed with guns with which to defend themselves.

Besides defending her against submarines and aircraft, a gun armament may also enable a merchant ship to repel or escape from the attacks of lightly armed and vulnerable surface ships, such as converted merchant ships, for example. It is, of course, true that the most complete defence against submarines and aircraft—and against surface craft as well, for that matter—is convoy; and it might be suggested that if our trade is subjected to unrestricted attack it must be convoyed, and the arming of merchant ships is then unnecessary. But that is not the whole story. I have already mentioned in connection with the late war that even the most perfectly managed convoy system cannot ensure that ships will not part company in bad weather or fog; moreover, there will probably be, as before, coastwise passages to assembly ports or after dispersal for which convoy cannot be provided. Beyond that it is clear that the danger is unlikely to be such as to justify convoy

in every part of the world. Even if sufficient escorts could be provided, the degree of risk away from the main area of attack is unlikely to justify the delays which a convoy system imposes and the resulting loss of carrying power. But outside the main area of attack there is still *some* risk, and if by mounting guns in merchant ships that risk can be halved as it would probably be where submarine attack is concerned, or reduced almost to nothing as might be the case with air attack, it will evidently be worth while to mount them. And then there is the case of fast ships. To include ships of over 15 knots in convoys would probably be unnecessarily wasteful. To reduce them to the speed of a convoy would much reduce their carrying power, and the risk of submerged attack to which they would be exposed when sailing independently is unlikely to be greater than any British merchant ship would face cheerfully—would in fact prefer to face rather than sail in convoy. For the fact is that it is a difficult and dangerous business for a submarine to attack submerged a fast ship which is well handled. To attack a ship steering a steady course is easy, whatever her speed, provided the submarine is in a favourable position to start with; and to attack a slow ship zig-zagging, although it requires a good deal of practice, is not unduly difficult; but to attack a fast ship which is doing a drastic zig-zag is very difficult indeed. In fact the chances of success are so small and the dangers so considerable that a submarine engaged in the inglorious business of attacking merchant ships may prefer to give it up and wait for an easier victim.

Against an unarmed ship, however, there would be no need for the submarine to rely on this chancy business of submerged attack: if she had sufficient surface speed, she could close on the surface; if slower than the merchant ship, she would remain submerged until well within gun range and then come to the surface—a very much easier business than submerged torpedo attack. In either case she would rely on gun-fire to bring the merchant ship to. But if the merchant ship is armed and hits back the submarine may well feel indisposed to risk tackling her by gun-fire. It is clear, then, that fast ships sailing independently must be armed in self-defence. Then, if they are well handled, it will be only a very skilful or very lucky submarine that would be successful in attacking.

A slower ship, voyaging in an area where there is not sufficient danger to justify convoy but where there is in fact a submarine lurking, will of course be exposed to relatively more danger than a fast ship. But even in her case the danger will be much decreased if she mounts a gun. As I mentioned just now in connection with the late war, the area of sea or the width of traffic lane which a submarine can cover

when attacking submerged is only about half what she can cover if she attacks on the surface; and even if she attacks submerged her torpedo may miss. If the merchantman is unarmed, the submarine can then come to the surface, but if her intended victim is armed she had best keep down out of harm's way.

Turning from attack by submarine to attack by aircraft we are, of course, on much less certain ground. We have no experience of attacks by aircraft on armed merchant ships, although there have been some attacks on unarmed merchant ships in the Mediterranean during the last few months. All one can say is that the latter, at any rate, have been remarkable for their inaccuracy. Perhaps our enemies in a future war may be more skilled in bomb-dropping over the sea than the airmen of the Spanish Civil War; but there is no doubt that it is very difficult for an aeroplane flying high to hit a ship under way. The difficulty may be increased, too, if the ship is constantly twisting and turning under helm. Of course, if a large number of aircraft attack simultaneously, a few of their bombs may be expected to hit; but when all the duties for which aircraft are required in war are considered it hardly seems that such a disproportioned weight of attack against single merchant ships is likely to pay.

As far as one is able to judge, then, it seems that to mount an anti-aircraft gun in a merchant ship will be of great value—of value, that is to say, to any ship which either by design or mischance is not in an escorted convoy. In convoy she would, of course, have the protection of the anti-aircraft armaments of the escorting warships. Anti-aircraft gunfire from a ship is not too easy, and it is hardly to be expected that a merchant ship with a single gun will be able to hit an aeroplane at a great height; but at such a height the danger to the ship is reduced almost to vanishing point. If the aircraft comes closer to make a dive-bombing attack, or for a torpedo attack, then even a single gun will put her to considerable risk and no doubt put her off her aim. Under these conditions I hardly think that the menace to shipping from the air is as great as some people would have us believe. There is, however, one other important matter if anti-aircraft guns are to be used with full effect, and that is to keep a good look-out. Aircraft move at such high speeds that, unless they are seen and the gun manned in plenty of time, they may have delivered their attacks before the gun opens fire. An efficient look-out is a very important part of the self-defence of merchant ships against aircraft.

There is one more aspect of self-defence that I ought to mention. By the end of the late war nearly all merchant ships were equipped with paravanes—a kind of water kite—as a protection against mines.

Whenever a ship was in waters where mines might be encountered these paravanes were towed from her forefoot, either from a shoe which slid down the stem or from the end of a boom hinged on one bow which, when lowered, clipped round the stem and projected just below the forefoot. These paravanes, as they moved through the water and under the surface, ran out away from the ship and their towing wires formed a V broader than the V of the bows. Any mine mooring encountered was, therefore, cut either by the wires or by the cutters on the paravanes themselves, and the mine floated away instead of swinging in and hitting the ship as a moored mine close to a ship's path would otherwise do. No doubt if there is again danger to merchant ships from mines, they will again be equipped with paravanes.

In conclusion, I would like to remind you once more that the self-defence of merchant ships is only one aspect of the defence of seaborne trade. The main burden of defence must and should fall on the Royal Navy, and that defence may include convoy. But if merchant ships are equipped and prepared to defend themselves whenever they are not in convoy—passively by following the routes which the naval authorities tell them are the safest, by zig-zagging, and by using paravanes as a protection against mines; actively by using their guns to repel lightly armed surface warships, submarines and aircraft—then self-defence will contribute greatly to their safety.

Above all, if merchant ships are handled in the future, as no doubt they will be, with the same courage and resource as have been shown so conspicuously in the past, their self-defence will play an important part in maintaining that flow of trade which is so vital.

DISCUSSION

VICE-ADMIRAL A. CRAIG WALLER: It seems to me that the safety of our supplies in wartime depends very largely on the speed of the ships which will carry them. Has the question of an appreciable increase in the general speed of our merchant ships been considered? I am well aware that it is a very big financial question whether a merchant ship can be run as a paying proposition in peace time if the speed is increased to any extent, but the advantages, certainly in wartime, of an increase of even a few knots in the general speed of our merchant vessels would be immense.

The merchant vessel may be attacked either by surface craft, or by submarines, or by aircraft. In the case of the submarine, we know that the enemy's limit of speed is very much restricted: speaking without the book, I think it is anything from 8 to 10 knots under water. On the surface it is also very much restricted, because it is impossible to construct a submarine with the speed which can be obtained by a surface vessel. Anybody who went through the War at sea knows what an enormous advantage high speed is in avoiding attack by submarines, and to a certain extent this also applies to aeroplanes. I have not any figures to go on, but I have seen it mentioned that the Japanese are constructing transports

or cargo-carrying vessels of very high speed—20 knots. If the average speed of all our merchant ships were 20 knots, the risk of attack by submarines would be quite small. In wartime not only would they be able more easily to evade an impending attack, but the time during which they would be in a position to be attacked would be much shorter, the reason being that the danger zones are restricted and a vessel of high speed could get through the worst in darkness, when the risk of attack is almost negligible.

Aeroplane attack is rather a bigger proposition, but there is no doubt whatever that a vessel of high speed is very much less vulnerable to it. I think this question of a general increase in the speed of the merchant vessels which would have to carry our cargoes in war ought to be very closely examined and considered in a big way. The first consideration in the self-defence of merchant ships should be the avoidance of attack rather than the means of dealing with it when it impends, and attack can be avoided best by evasion, in which high speed is the main factor.

ADMIRAL SIR RICHARD WEBB: It happened to fall to my lot at the beginning of the War as Director of the Trade Division to be charged with the arming of merchant ships, and I have come here to pay a tribute to the man to whom principally we owe the fact that we entered the War with thirty-nine ships armed—Admiral Sir Henry Campbell. It was he who secured the assistance of certain shipowners, among whom I would particularly mention Harold Sanderson, of the White Star and other lines, Owen Philipps—afterwards Lord Kylsant—and Frank Houlder, of the Houlder Line. I might add that both the First Lords of the Admiralty during that period—Mr. McKenna and Mr. Winston Churchill—backed Admiral Campbell most heartily.

What we had to consider chiefly was the arming of the food-carrying vessels. Henry Campbell went "all-out" to get all the meat-carrying vessels armed, afterwards the grain-carrying vessels, and then the others. You have heard how the scheme came to rather an abrupt end after a while, but that was our intention at first. From the beginning there was a definite campaign to try and prove that this arming of merchant ships was contrary to international law. Of course it was nothing of the kind. As the Americans were very anxious not to find themselves on the wrong side in the argument, they said that armed ships should not come into their ports. Then, I seem to recollect, we were told that, if we would take our guns out of our merchant ships, the Americans would do what they could to persuade the Germans to give up their "sink at sight" policy: in other words, we were asked to give up a legal right if the Germans would give up doing an illegal thing. That, fortunately, came to nothing. There was, in fact, an American precedent for our action, for in the "quasi-war" with France in 1798 they passed an Act authorizing the defence of the ships of the American Mercantile Marine against French depredations.

Later on President Wilson brought out a list of points—not fourteen in this case, but about eight of them, though only two were of prime importance. One of them was that the ships were not to enter American harbours with ammunition on board: it had to be taken off outside. The second was that the gun was not to be bigger than 6 in.; we expected to be pegged down to a 6-pdr., or something of that kind, but when we found that we could mount such a big gun, our stock went up. As we have heard, by the end of 1916 we had 2,000 guns, and by the end of the War nearly all our ships were armed.

We know, of course, that the submarine is a great danger, but we must not lose sight of the fact that on the high seas there is also risk from armed raiders. Why

the Germans did not send out more of them I can never understand; a future enemy may be more enterprising. One great story of the War is that of the encounter between the German raider "Moewe" and the S.S. "Otaki," commanded by Captain Alexander Smith and belonging to the New Zealand Shipping Company. This vessel got the raider astern and put up a splendid fight: you can read all about it in Archibald Hurd's book, *The Merchant Navy*. Finally, after causing much damage to his antagonist, the Captain went down in his ship with colours flying; I am glad to say he was awarded a posthumous V.C.

As the Lecturer has shown, ships cannot always be in convoy, for many reasons, and at such times they will be just as much exposed to attack on, under, and over the sea, as in 1914. Therefore I do hope that defensive arming will go on. I noticed the Lecturer remarked that *in certain circumstances* [my italics] it is expected that merchant ships will again be armed with guns with which they can defend themselves. In the late war we armed ships openly, and I hope that will be possible in future. If we cannot actually arm the ships, at any rate we can prepare them for it, so that the moment war breaks out the guns can be placed on board.

There remains the question of ammunition, and that is difficult. At the beginning of the War ships had guns on board but no ammunition, and in one case this led to the capture of a vessel which would otherwise have been able to defend herself.

CAPTAIN R. HARRISON, R.N.R.: There is a point about the self-defence of merchant ships which the Lecturer did not mention, but which may have some importance. In all the books written about the late war at sea, it has been emphasized how nearly we were brought to defeat owing to the successful attack made on our shipping by enemy submarines; also it has been frequently stated that it was the Convoy System alone which saved the situation. These facts, with every detail, will be perfectly well known to any future enemy. Whatever else may have changed in the interval, we must realize that merchant ships, and particularly those on which our food supplies and trade depend, have changed very little. There is a slight improvement in their speed and seaworthiness as a whole, and the ships themselves are bigger; but they are also fewer, which means fewer targets but correspondingly greater effect for each ship lost. Submarines are probably better and armed with bigger or longer ranged guns; so the position is not improved from that point of view.

The greatest change has been in aircraft. But I am inclined to think that a merchant ship, suitably armed, could put up a good defence against an air attack. The upper deck of a cargo steamer is quite a suitable platform for anti-aircraft guns, possibly better than that of a man-of-war. An aircraft making a determined attack would have to come down fairly low and so expose herself to fire at short range. One bomb is not likely to sink a ship, and there would be little chance of an aircraft being able to force the crew to abandon their ship. Aircraft are more likely to be successful against ships in dock than at sea.

I suggest that aircraft are most likely to be dangerous if they are used to report merchant ships, particularly Convoys, at a sufficient distance to allow of a concentration of submarines, or possibly surface men-of-war, to intercept them. Under such conditions a convoy system is likely to break down.

The ability of a merchant ship to defend herself successfully from all likely forms of attack is of supreme importance.

REAR-ADMIRAL H. G. THURSFIELD: I am not unduly pessimistic as to the results in the next war. I should say that the lesson of history is, not that it tells a future enemy how to bring this country to its knees, but that it shows him he

cannot do so by refusing to fight and attacking merchant ships: two enemies have tried the former—France in the Napoleonic War and Germany in the Great War; both failed. I am not nervous about any future enemy faring any better even though he has read all the books in the library, provided of course that the Services are kept up to strength, as no doubt they will be.

I want to ask two questions. I am under the impression that the American decision against the entry of defensive merchant ships into American ports was taken before the outbreak of the War when the whole question came before the Supreme Court of the United States. The Lecturer also stated that the reason for the embargo on the defensively-armed ships was that the Americans had interned certain German merchant ships lest they should mount their guns. I rather question the accuracy of that statement. The German merchant ships in American ports at the outbreak of war interned themselves. They did not leave because they knew that they ran the risk of being captured as soon as they passed out of territorial waters. The American Government was faced with a difficult problem, but they solved it when the United States entered the War by seizing the German ships as prize.

The Lecturer mentioned the difficulty of hitting a ship with a bomb. When the Spanish war had been going on for a year there was an article in *The Times* summing up the experience gained with modern weapons. I do not recollect the exact figures given by the writer, but they were something to the effect that, as the result of experience, none of the airmen in Spain thought it worth while to attack a target smaller than 150 metres by 50, and these were reputed to be efficient airmen belonging to the German, Italian and Russian forces. There are very few ships of that size, and if that is the smallest thing an aeroplane can hope to attack under war conditions, the danger to ships is not as great as has been estimated in some quarters. In the late war, a merchant ship by firing at a submarine often forced it to submerge, and so foiled its attack; by firing at an aeroplane she may keep it high enough to make bomb-dropping less accurate than it would be otherwise.

Admiral Craig Waller suggested increasing the speed of merchant ships, and he alluded to Japanese oilers of 20 knots. Mr. Watts—a practical shipowner—writing in one of the Shipping Annuals, stated that the economic speed of an oiler was not higher than twelve knots. If the Japanese are building merchant ships to run as an economic proposition, they cannot give an oiler a speed higher than twelve knots; if they do, the ship, instead of paying, will be run at a loss, and no shipowners are prepared to carry on on that basis for very long. Therefore I rather doubt whether there is much prospect of increasing the normal speed of merchant ships. Those fast oilers are being built as fleet auxiliaries, either for attendance on the Japanese fleet, or for independent use as raiders: there are not many of them. There is no question of the whole merchant navy of Japan being given a higher speed, and I do not think that is a practicable proposition.

The suggestion was made that air reconnaissance should enable submarines to attack convoys in such large numbers that convoy would cease to be an effective method of defending merchant ships. The Lecturer will no doubt have something to say about the operation of submarines in large numbers, but I suggest that the author of that suggestion may have over-estimated the possibilities of effective co-operation between aircraft and submarines. One must not underrate those possibilities, but at the same time I think that to form a true estimate of the future we must not place them too high.

COMMANDER A. E. GODFREY, R.N.R.: Is it proposed to wait until the outbreak

of war before certain ships are armed ? Nowadays, when war is not declared before acts of war occur, that seems a most important point. The essential thing is that the guns should be there in time. I remember before the War going on board certain German steamers and all of them had mountings for guns. If we had guns on board our ships, whether mounted or kept below, it would have a very salutary effect in keeping submarines away. So far as the mounting of anti-aircraft guns on merchant ships is concerned, it is a pious hope at present, because all the anti-aircraft guns in existence are wanted for other purposes.

Ammunition for merchant ships might be stored at the British ports at which they call.

CAPTAIN R. FITZGERALD, R.N. : One aspect of defence has not been mentioned, and I should like to bring it forward as an offset to the pessimistic remarks of certain speakers. In the late war our shipping could be attacked without the enemy having to identify it. Circumstances will not always be like that. It would be very difficult for an enemy whose seaboard lay entirely on the Mediterranean to attack our ships in that sea, because he would first have to identify them, which means that a submarine or aeroplane could not attack without warning.

The question of disguising our merchant ships in war seems to be of some importance.

THE LECTURER

Admiral Thursfield raised the point about the state of affairs in America at the outbreak of the late war. The decision was taken by the British Cabinet early in September, 1914. The matter was brought to a head by the White Star liner " Adriatic," which had been sent to America with four or six guns mounted. If there was a Supreme Court decision I do not know of it, and it must have been reversed by April, 1915, when President Wilson's " points " mentioned by Admiral Webb were made. I seem to remember that the Cabinet decision to forgo arming our merchantmen or sending them to American ports was influenced by the fact that the German ships were either self-interned or held back by the American authorities. Whether the American authorities took any steps to keep the German ships there I do not know. Probably they interned themselves.

On the broader aspects of trade defence, I do not agree with the pessimism expressed in various quarters, but that is a large question, and my lecture was confined to the self-defence of merchant ships. I agree with Admiral Thursfield that attack by a number of submarines assisted by aeroplanes is not so simple a proposition as it might appear to be.

It has been stated in Parliament that preparations are being made for defensive arming of merchant ships, and that is really all we know about it. Admiral Webb mentioned that at one stage during the late war the Americans tried to strike a bargain between Great Britain and Germany. They said that if we would disarm our ships they would endeavour to get the Germans to cease attacking without warning. That, I think, was in January, 1916, and we turned down the proposition, saying that it was our right to arm the ships, and that, beyond that, it seemed unlikely that the Germans could be held to any promise of that sort.

THE CHAIRMAN

I think Commander Creswell, like all good lecturers, has given us something in his last sentence to take home. He said that, if merchant ships are handled in the future with the same courage and resource as in the past, their self-defence will

play an important part in maintaining that flow of trade which is so vital to this country. I agree that there is no necessity to be pessimistic in this business, and it has come out of the discussion, and is not denied by anybody who has given thought to the matter, that the continued existence of the British Empire depends on the ability of the Merchant Navy to carry on, come what may. We shall never forget the tremendous debt of gratitude we owe to the Merchant Navy in the late war. They were faced with new weapons and were attacked with a ruthlessness without precedent in war annals; they were torpedoed, bombed, shot at, mined, sunk, and left to drown; but they carried on.

We learnt many lessons in the late war, but one of them was the necessity of training Merchant Navy officers in the modern aspects of trade defence and how to handle their ships and defensive armament when attacked. So we had the spectacle in the middle of a great war of these officers sitting in classes and being lectured to. It was obvious that the training of the Merchant Navy in this respect was a vital aspect of national defence. This was a lesson that was never forgotten by the Admiralty since the War, but it is only recently since the country has awakened to the necessity of rearmament, that it has become possible for the Government to authorize the training of Merchant Navy officers in peace time.

Commander Creswell has been engaged in organizing in peace time a week's course for 15,000 officers engaged in a commercial concern. This would have been a very formidable task but for the wonderful co-operation of the shipping industry. We approached the shipowners with some diffidence, but it was amazing how well they responded and gave us their wholehearted co-operation, and I must say how grateful the Admiralty are to the Shipping Federation, which is really the Second Sea Lord's office of the Merchant Navy, for the way they have allowed their General Manager to come and help us to surmount all the difficult pitfalls that beset us in this particular scheme. Nor must I forget the Liverpool Steamship Owners' Association, who were equally helpful in tackling the matter up in Liverpool in a characteristic manner.

Having approached the employers, we had to approach the employees, and we received whole-hearted assistance from the two big Officers' Associations—the Officers Federation and the Mercantile Marine Service Association, and finally from the officers themselves. The latter was most important of all because, however much we organized the courses, if it had not been for their willingness it would have come to nothing; as it is, the embarrassment has been to keep the classes down to a reasonable size. These officers are going through the courses at the rate of five hundred a month. Up to September, 1,221 had offered themselves for instruction. I have visited nearly all the ports in which this instruction is being carried out, and you can see a young officer sitting side by side with what we affectionately call old " shell-backs "—the very men who twenty years ago were the enemy's targets. The breed has not altered, and the Merchant Navy will carry on, come what may.

The customary vote of thanks was accorded to the Lecturer and Chairman.

THE NEW INFANTRY WEAPONS

THEIR ORGANIZATION AND TACTICAL EMPLOYMENT

By LIEUTENANT-COLONEL R. L. SHERBROOKE, D.S.O., The Sherwood Foresters (Nottinghamshire and Derbyshire Regiment).

NOW that the new weapons and M.T. vehicles are beginning to reach units, it may be of interest to discuss some of the lessons derived from the exercises carried out by an independant rifle battalion last summer. In order to test thoroughly the new equipment and organization certain companies, platoons (each of three sections) and specialists groups were made up to their war establishments; sections were equipped with Lewis guns to represent Bren guns, dummy weapons of the correct size and weight took the place of anti-tank rifles, and platoons and groups were each allotted a 15-cwt, truck.

THE BREN GUN IN THE ATTACK

The first series of exercises were designed to test certain theories affecting the handling of the Bren gun during the infantry attack in open warfare. To begin with the light machine gun (L.M.G.) was regarded as an integral part of the section and was never moved from it. During the actual advance, however, it was found that the Bren gun could rarely be fired unless the section or platoon to which it belonged was working entirely on its own or had ample room for manœuvre. Further, the very action of seeking and occupying good fire positions, found almost invariably on the flank, disorganized the sub-units concerned. The riflemen of the section tended either to become the servants of the L.M.G. rather than infantry armed with the bayonet or, alternatively, were inclined to go ahead and leave the men carrying the L.M.G. and its ammunition far behind, thus weakening and disorganizing the section. Conversely, if the riflemen waited for the L.M.G. the advance was slowed down, and in the final phase of the attack the numbers of bayonet men were considerably reduced through the disorganization of the section and platoons.

When, as was the case in certain exercises, three companies had been launched in the attack, seventy-five per cent. of the automatic fire power of the unit became temporarily inoperative and/or could not be employed

for covering fire. If adequate support and covering fire from M.G. (Vickers) units is available this last point may not perhaps be of so much importance, but where the reverse is the case it is essential that a commander should have left under his hand sufficient L.M.Gs to provide all the covering fire he requires.

Judging by the completely new role filled by the mechanized M.G. units in the recent manœuvres, it seems probable that rifle battalions of the future will be unable always to depend upon supporting fire by Vickers units. The vastly increased mobility of the new M.G. battalions and their newly-found ability to "raid and hold" or form part of the covering and reconnaissance formations, make it obvious that rifle battalions often must be prepared to supply their own covering fire, and this they will be able to do if an adequate proportion of their L.M.Gs is left under the hand of the battalion or company commander.

During the second series of exercises in the attack a different principle was adopted. This ran as follows: "The Bren gun should be made available—away from its section and the men of its section—if the Platoon or Company Commander has a definite use for it in some other way; e.g., to provide covering fire by one section for a platoon or by one or more platoons for the remainder of the company. To tie the Bren gun to its section on all occasions may be to lose its usefulness whilst, on the other hand, it is likely to slow up and disorganize the action of the attacking rifle sections."

The immediate result of this instruction was the formation by each Company Commander of a L.M.G. covering-fire unit which automatically became the reserve of the platoon or the company, and to which was loaned one or sometimes two of the L.M.Gs belonging to attacking platoons. In the case of the company, this provided the Commander with a reserve fire power of six to nine L.M.Gs with some thirty men to serve them. It was found that some Company and Platoon Commanders preferred to keep one L.M.G. with each of the forward platoons for infiltration and surprise, and in order that some automatic weapons should be immediately available after the capture of the objective.

The Bren Gun in the Defence.

For the series of exercises designed to practise the handling of the Bren gun in the defence the following instructions were issued: "In the defence concealment is not only essential but almost always possible, and field of fire must always be subordinate to concealment. The principle of siting platoons or sections on reverse slopes should be followed if the forward slopes cannot offer adequate cover from view."

" Conversely, if full advantage of the long range of L.M.Gs is to be taken, a proportion of the guns must be sited on forward slopes or in positions from which the Numbers One can see to fire at targets half a mile away. Such L.M.G. posts are naturally what enemy forward observation officers will seek, so the greatest care must be taken to ensure their perfect concealment, and the fewer the men round the gun the less will be the movement, and the less the likelihood of their being spotted."

"Anyone who commanded a battalion in the War knows that, from 1915 onwards, rifle fire, except by expert snipers, was usually a waste of ammunition at ranges over 300 yards, and that by day. There is little object in putting riflemen on forward slopes in dangerous and cramped positions where heavy casualties will be inevitable and in which rest is all but impossible. Company and Platoon Commanders must, therefore, site a certain number of their L.M.Gs, and their Numbers One and Two, in well concealed positions on forward slopes and leave them there if necessary all day, withdrawing the rest of their men to positions on reverse slopes where they can rest by day and from which a good field of fire to the crestline of the forward slope or probable avenues of approach can be obtained at ranges of anything from seventy-five yards upwards."

From the application of these instructions the following lessons were drawn : besides providing eighty per cent. of their men with cover from view, rest, the possibility of hot meals and greatly increased facilities for communication and supply, Company and Platoon Commanders realized that only in this way could the fullest advantage of their increased automatic fire power be enjoyed and that, although some of the more advanced L.M.G. posts would probably be lost in the unlikely event of a successful daylight attack by the enemy, this disadvantage would be more than compensated for by the heavy casualties to the enemy and the greatly increased depth of the company's defensive areas.

The position of the L.M.G. posts of the reserve companies must depend upon the presence or absence of M.G. (Vickers) units, and to obtain good results from these reserve L.M.Gs, the positions had sometimes to be defiladed from the front at ranges up to 800 yards. Here again the riflemen would have been of little use had they remained with their L.M.Gs. The siting of the detached L.M.G. posts required both tactical knowledge and imagination if surprise was to be obtained. Cross fire by pairs of posts was sought when possible, and strict orders regarding conservation of S.A.A. and firing only on allotted areas and approaches were required.

Night Firing on Fixed Lines.

The accuracy of L.M.G. fire on fixed lines by night or in smoke or fog is an essential postulate for a successful defence. In this connection, there are two important points that require consideration :—

Firstly, if a Bren gun is to fire along fixed lines with any accuracy the numbers One and Two must reach the position to be defended whilst there is still enough daylight to lay their fixed lines.

Secondly, these fixed lines will naturally be laid on re-entrants and other covered approaches likely to be used by the enemy, and once so laid cannot be altered. This point is not one which is likely to escape leaders of attacking troops who will naturally try to avoid places where it is expected to encounter automatic fire on fixed lines. For these reasons, as well as because of the difficulty of always being able to find suitable solid ground for the legs of the tripod, too much reliance should not be placed upon the defensive fire of L.M.Gs at night or during advances covered by smoke.

Summary.

To summarize briefly the lessons learned. When ordered to carry out an attack the Company Commander must decide upon the exact armament that each of his platoons is to carry, and must invariably provide for adequate covering fire within his own company. The addition of twelve Bren guns to the armament of a rifle company has more than doubled the depth of the area that the Company Commander can now occupy in the defence and, besides introducing the element of surprise, has made possible the adoption of the " reverse slope " principle.

The Anti-Tank Rifle

At present the anti-tank rifle forms part of the equipment of every platoon and is carried in the platoon truck. For its own close protection it has no separate organization and must depend upon the nearest section or platoon of infantry. With its ammunition it weighs nearly fifty-six pounds and has to be man-handled, so it is naturally lacking in mobility. It follows, therefore, that the A/T rifle must either be sited close to one or more sections of its platoon or, conversely, must have a section specially detailed to protect it, should it have to be sited at some distance from the nearest infantry position.

As, more often than not, it was found tactically necessary to site the A/T rifle several hundred yards from the nearest infantry position, the Company and Platoon Commander's schemes had to suffer in order to provide close protection for the A/T rifle detachment. Also, these small

detachments were usually the last to get into or withdraw from their positions, owing to the distances, that they frequently had to cover and to their lack of mobility.

On several occasions armoured fighting vehicles (A.F.Vs) were able to break through without opposition although the Battalion Commander had been warned of their approach. This was due to the fact that the A/T rifles, not being provided with separate trucks, could not be got quickly enough to the points where it was hoped to intercept the enemy A.F.Vs.

The successful siting, camouflage and handling of the A/T rifle detachment requires tactical knowledge, specialist instruction, imagination and initiative and, as a general rule, was found to be beyond the powers of the average Lance-Corporal. It is submitted for consideration, therefore, that the A/T rifle should be a company and *not* a platoon weapon, and that in every company an A/T group should be formed under the command of an Officer, and that this group should be equipped with at least one 15-cwt. truck.

Every A/T rifle detachment should include one L.M.G. for its own close protection, and the personnel of the detachment should be :—

1	Full N.C.O.	In command of detachment.
2	No. 1's	For the two weapons.
2	No. 2's	
1	Spare man, for duty as connecting file, scout and ammunition carrier.	
Total 6		

The equipment of every company A/T group should include sufficient wire to provide a number of hasty road obstacles pending the construction of road blocks, and the responsibility of the siting and constructing of these blocks should rest with the A/T Group or Detachment Commander.

The A/T group should consist of four detachments so as to enable the detachments to work in pairs when possible, thus affording each other mutual protection from outflanking movements by enemy A.F.Vs. It is obvious that in future wars A.F.Vs will play an increasingly important role necessitating constant protection of the flanks of the infantry, to provide which well-trained A/T rifle detachments possessed of adequate mobility will be required. In this connection one important duty which could be allotted to the four A/T groups of a rifle battalion is the picqueting of dangerous points whilst on the move. At the present moment this duty is supposed to be carried out by the anti-aircraft

platoon, but this unit will be fully occupied with the A.A defence of the Brigade and Battalion Headquarters as well as that of the " B " echelon transport. Another advantage of the suggested company A/T group organization is that it would provide a powerful mobile company reserve consisting of one Officer, four N.C.Os and twenty men armed with four L.M.Gs which would be available on any occasion when no attack by enemy A.F.Vs was expected.

The Mortar.

Sometimes called the " Company Commander's Gun," the 3-in. mortar is essentially a weapon of offence, and the Detachment Commander is taught that he must be the shadow of the forward rifle company commander and that in the attack his weapon should not be employed to fire at long ranges.

Of the difficulties encountered during this year's training, the greatest was the problem of porterage, because the forward detachments found it impossible to keep up with the advancing infantry. The result was that Detachment Commanders, who had to act as forward observers besides commanding their detachments in fire positions, experienced great difficulty in keeping touch with the forward rifle Commanders. Their detachments were sometimes 600 yards in rear, and when required to give assistance quickly were not always able to do so. It would appear, therefore, that the 3-in. mortar cannot at present fulfil the whole task for which it was designed, and it is suggested that some type of light " dragon " or mechanized carrier will have to form part of the mortar platoon.

It is submitted that the reorganized mortar platoon should consist of five detachments instead of four, that four of these should each possess a " dragon," and that the fifth should be " a heavy mortar section " for use at or near Battalion Headquarters. This last section should consist of two 3-in. mortars and a 15-cwt. truck, and its principal role should be to provide a smoke screen at any particular point during the advance. For this reason 75 per cent. of its ammunition should be smoke bombs. It would also always be available for counter-attack fire concentrations on lost key positions. As the " dragon " would experience no difficulty in keeping close up behind the attacking platoons it is submitted that a lighter and smaller calibrated mortar might be used with a maximum range of 1000 yards. In view of the special role of this close supporting mortar and the danger of indiscriminate use of smoke by Commanders of small forward units, it is submitted that 75 per cent. of the ammunition carried by the " dragon " should be high explosive.

The question of communication between the O.P. and the fire position of the mortar detachment, which may well be half a mile apart, appears to present great difficulty and, although the addition of one N.C.O. and two or three men per detachment might help, it is probable that a more reliable system will have to be evolved than any suggested code of signals based on that of the M.G. units.

The 15-cwt. Truck.

M/T has proved a most valuable addition to the rifle battalion's equipment, and has not only facilitated and quickened up every exercise in which reconnaissances of new positions and withdrawals formed part of the action, but will probably add considerably to the popularity of the infantry arm, from the point of view of recruiting. It is, however, strongly recommended that each truck should carry a second driver, who would also act as A.A. gunner, ground scout, connecting file and expert rapid loader.

After the first few exercises the following general instructions were laid down for the tactical employment of the trucks. "The platoon truck must be used to help the platoon forward even if some risk to the truck is certain. To keep the trucks too far back and to man-handle their loads over a distance unnecessarily great, is to risk the attack failing through the exhaustion of the attackers. Some sort of cover from enemy view is, however, essential whilst unloading, or the casualties amongst the trucks and personnel may be too heavy. With this proviso, it is considered that the trucks should get as far forward as they can using speed, smoke and all available cover."

During the recent manœuvres, there were many occasions when platoon trucks were unloaded at points 2000 to 3000 yards distant from the objective, presumably because it was feared that their presence would give away impending attacks or because the umpires might put them out of action. This meant that the men had to carry with them, over a considerable distance, L.M.Gs, A/T rifles, some tools, signalling pistols, cartridges, grenades, dischargers and other equipment and weapons as ordered by the Company Commander. If to the weight of these articles is added the ammunition that would also have to be carried on active service, plus anti-gas equipment and individual rations, it becomes extremely doubtful if this task would be possible, even to troops of the finest physique. It is submitted therefore that some other vehicle will be required that can go forward with the attacking platoons to within 200 or 300 yards of the enemy positions.

To meet this difficulty, it is suggested that a modified form of the 1915–16 L.G. handcart might be evolved with accommodation for some

five cwt. of arms, ammunition and equipment, capable of being pushed or pulled across country by two, three or four men. This handcart should be fitted with semi-pneumatic wheels as used to-day on light farm vehicles, and should be so constructed that the load can be lifted off the chassis for the passage of more difficult obstacles. The handcart should have an attachment similar to that used on trucks in coal mines by which it could be fixed to the rear of the 15-cwt. truck, to which it would be a form of trailer on the road until arrival at the point where the truck had to be left behind. Plans and designs of at least one suitable vehicle have been submitted for consideration.

Protection and Mobility.

During the recent exercises of the 2nd Division, with Brigades sometimes occupying frontages of five miles and, in depth, covering greatly increased areas, it became obvious that rifle battalions will have to be provided with means of protecting their own flanks, both on the move and when occupying defensive positions. Even if a proportion of the Divisional mechanized cavalry and the M.G. units is available for this duty, the gap of several miles that must exist between these widely distributed units and the infantry, must contain some supporting detachments directly covering the flanks of battalions. On the move this sytem of flank protection, already dealt with under the heading of the anti-tank rifle detachment, will develop into a system of picqueting based on North-West Frontier tactics, in which all cross-roads or other dangerous points must be held during the passage of the Brigade and Battalion columns. Unless the infantry detachments carrying out this particular duty possess A/T rifles, L.M.Gs and considerable mobility, in addition to plenty of portable wire for temporary road blocks, they will neither be able to stop the enemy A.F.Vs nor catch up the column when it has passed. If this is true of columns of marching men, how much more does it apply to moves by bus route where the screen of protective troops will be even further ahead or away to the flank, and where moves of picquets from post to post will have to be very much more rapid? The tendency to move rifle battalions by M.T. or bus whenever possible is increasing, and with it the necessity to protect the head of such columns.

The Divisional Cavalry screen, perhaps supported by a mechanized M.G. company, will be operating ten miles ahead and over a wide front. Will it be possible for this rapidly moving unit to guarantee that no enemy detachments of A.F.Vs will succeed in getting through to attack the bus columns? Even if such a guarantee were possible it would still not relieve the Commander of each battalion bus column of the

responsibility for his own close protection by a mobile advanced detachment armed with A/T rifles and L.M.Gs moving some miles ahead, and with motor bicycle scouts still further forward.

The present organization of the rifle battalion does not include any unit that could act in this capacity, and it is therefore suggested that the strength of the existing Intelligence Section should be increased by two N.C.Os and nine men, and that two 15-cwt. trucks with three motor bicycles should be provided for its transport. In addition there would be the Intelligence Officer's light car. Each truck should be equipped with an A/T rifle and a L.M.G., the whole reorganized unit being called the "Battalion Intelligence Group." This suggestion would not only enable the Battalion Intelligence Unit to render far greater service than it can hope to do at present, but would also permit of its future role approximating more closely to that of the scout platoons of the motorized infantry battalions, forming part of the Mobile Division. Finally it would be able to provide Battalion Commanders when out on reconnaissance with the protection that they now lack.

Organization.

Suggestions with regard to the formation of the company A/T group, extra drivers and the battalion Intelligence Group are of little practical value unless they also indicate the means by which the required personnel can be found without increasing the establishment of the rifle battalion. This can only be done by reducing the number of companies and platoons, and it is therefore submitted that the "Three-unit" principle, already adopted with regard to battalions and sections, should be applied throughout the rifle battalion. This reorganization would make available for redistribution within the battalion seven Officers, one Warrant Officer, ten Sergeants and 190 rank and file, and would increase the establishment of the company by 50 Corporals and Privates, including the anti-tank group. This would also raise the bayonet strength of the section to ten, which would be of undoubted advantage because the present small section is apt to lose its identity as a tactical unit when two or three casualties have been incurred; and stronger sections would help to overcome the tendency of these small depleted sub-units to close in upon the rest of the platoon and eventually form one tactical unit in the latter stages of the battle.

SOME ASPECTS OF POLICE WORK IN WARTIME

By G. R. Watson Smyth

Air Raids Precautions Adviser, Devon Constabulary.

INSEPARABLY connected with the work of the Police in time of war will be that of the Air Raids Precautions Organization. This body has been created by the Home Office to deal with the " direct " results of hostile air raids. These " direct " results will be the damage to buildings or fires caused by high explosive or incendiary bombs, human casualties, and the areas rendered temporarily uninhabitable by gas. But, in addition, a hostile air attack will also cause what may be termed " indirect " effects. By this term is meant the general dislocation of normal means of transport, the effect on morale of those who have endured a raid, and generally, the interruption in normal distributive methods which will be a consequence of the direct results.

These indirect effects may have very serious consequences, and it will be for the Police to institute the necessary measures to minimize these consequences as much as possible. Everyone knows that England depends for her life upon being able to obtain a sufficiency of certain essential imports, chiefly foodstuffs with which to feed her people. But it is not so generally appreciated that she depends equally upon her ability to distribute those imports after they have reached her shores. This process of distribution does not cease until the goods concerned have reached their ultimate destinations, which in the case of food are the stomachs of the people, or in that of raw materials the factories wherein they are required. Indeed, as regards raw materials the process may be held to extend even further until the articles into whose manufacture they enter have reached *their* ultimate destinations which may be either inland or abroad. This particularly applies in the case of munitions of war which are valueless until in the hands of the force for which they are intended.

Distribution depends upon transport ; first, ocean shipping to bring the goods to a home port, and then the railways, roads, canals, and to a small extent coastal shipping. By far the greater bulk of the essential imports is handled by the railways and roads, and for the first time in history it is now possible for an enemy directly to attack those means of internal communication, and so handicap the efficient functioning of the

distributive system. No part of the country can consider itself safe from attack from the air, and this especially applies to small towns and villages which are traversed by railways or main roads, and in even greater degree as their proximity to a major port increases. A railway offers a target which is easy to see from the air, and in addition one which it is easy to hit and seriously damage. Bridges are particularly vulnerable and repairs to them take time, especially should several on the same stretch of line be rendered unusable, because it might be necessary to mend them one after the other in order to bring up the heavy and bulky material required for repairs.

The main roads, too, may be damaged to such an extent as to put out of use long stretches, as certain key points such as bridges or small towns on which roads converge may be destroyed. It should be remembered also that a moving column of vehicles presents an objective easily seen from the air, and those who have seen the photographs in the Imperial War Museum will know the awful havoc wreaked by aircraft on such targets. An obvious precaution would be to arrange that vehicle movement should take place at night, but the parachute flare has been developed so that it is now possible to illuminate an area sufficiently to enable an attack to be pressed home.

But England possesses the most complete network of minor roads of any country in the world, and it is impossible to imagine any enemy ever attaining such a degree of supremacy in the air as to be able seriously to interrupt traffic using these by-roads; nevertheless, the control of such traffic will necessitate a high degree of organization if grave congestion and confusion are to be avoided. Yet this must be done, and it is essentially a task for the Police. For geographical reasons it will be apparent that more use is likely to be made of the western and south-western ports than of those on our eastern seaboard. Consequently the control of this essential traffic is likely to fall heaviest on those Forces in the neighbourhood of the former ports. One method of speeding up traffic and of adding to its safety if attacked would be to reserve certain roads for vehicles all moving in the same direction. But Police Forces are local in action, and no one Force could institute such a plan except to a very small extent. It is suggested, therefore, that this is a matter which should receive the close attention of the Government, which alone has the power to put into operation such a scheme on a big enough scale.

The Western Forces, too, will be faced with another problem, that of the arrival, probably in a hurry, of many thousands of refugees. This word is used in no derogatory sense but simply as a convenient term to apply to those who, realizing that they can do no good by

remaining in areas particularly likely to be raided will decide to seek safety in the West. It is, too, an old instinct of man to send those dear to him to a place of safety in a time of danger, while it is, perhaps, an even older instinct which leads those not actively engaged to get out of the way of hostilities. It follows that the majority of these refugees will be women and children together with elderly persons of both sexes. A considerable proportion may be in a state of nerves and not properly equipped for a prolonged stay in the country, due partly to lack of forethought as to their requirements, and partly to lack of time to make adequate preparations.

The season of the year when hostilities break out is another factor of considerable importance owing to the presence of normal holiday makers in the West during the summer months. Many of these may be expected to remain, and there may not be enough accommodation for the new arrivals. At the moment there are no powers for billeting civilians, yet those affected must be provided with shelter and rations if their morale is to be maintained. This question of maintenance of the national morale will be of the first importance. It is agreed that any future war will call for a national effort far transcending that put forth in 1914–18, and that effort will not be forthcoming unless morale is high. That spirit is unquestionably affected by danger; but when danger is allied with hardship and discomfort the morale of men and women tends to weaken, and their determination to relax: it is now realized that the deciding factor in the Great War was not the effort of the Allied armies, but the slow inexorable pressure of the blockade at sea. This imposed such hardships on the German people that their will to continue the struggle disappeared.

It is hoped that consideration of the foregoing will show that traffic control, with all that it implies, may well be the deciding factor in any future conflict. For every modern fighting force depends, and will depend as never before upon the products of the factories and workshops, and it is not to be expected that the production of these establishments will be at maximum unless all employed in them are of a high morale, convinced of the justice of the cause for which they are working, and determined to see the conflict through to the end, however bitter that may be. Nothing is more calculated to break down the morale of the civilian population than a complete dislocation of the distributive system.

The railways are very vulnerable, the main roads merely vulnerable, while the minor roads may be assumed to be largely invulnerable. But, if traffic is to use them in time of war to the fullest possible extent, a firm but elastic control will be essential.

THE MOTOR TORPEDO BOAT

ITS CAPABILITIES AND POSSIBILITIES

By Lieutenant W. J. Van de Kasteele, R.N.

THE arrival of the First Motor Torpedo Boat Flotilla in the Mediterranean at once raises a host of conjectures in the mind of the serving officer who has heard so much about their production but who knows so little about them. What sort of a performance do they put up? Are they seaworthy? And above all, for what are they ultimately intended?

That the revival of a class of small, fast, and handy craft is a step forward must be appreciated by those who remember the wartime Coastal Motor Boats and the unforgettable services they rendered. Despite many drawbacks, not the least of which was their inability to keep the sea in heavy weather, these light vessels proved their worth in many directions, including submarine chasing and all the varied work entailed by coastal patrols. Their descendants have all the advantages of the C.M.B's, while many of their disadvantages have been eliminated. Stoutly built, these modern torpedo craft are sixty feet in length, and are armed with two torpedoes and a pair of machine-gun mountings, each consisting of four guns. With one officer and a crew of eight, they can be victualled and stored for a fortnight. Their three Napier Lion engines give them a top speed of around forty knots, and their endurance is reputed to be five hundred miles at twenty knots. Their performance in a seaway is stated to be exceedingly good as, in common with the Navy's modern fast boats, they are built on the speedboat principle and by attaining a high enough speed, they keep comparatively dry. They have been tried out in seas of from twelve to twenty feet, and are undoubtedly most successful sea-boats.

In fact, M.T.B's are craft with an adequate torpedo armament, a high speed, and a good endurance: and it remains to be seen for what purpose they will be employed. It is suggested that in view of their capabilities they would be particularly suitable for torpedo attacks on the enemy battle fleet under either of the following conditions:—

(*a*) At night, or in low visibility by day.

(*b*) In heavy weather, whatever the visibility.

It must be obvious that a large number of such craft handled by capable and determined officers would have little difficulty in creating an immense effect on an enemy fleet at night. No screen could stop them, and even if their presence was discovered at the outset of the attack, their speed and easy handling would make them extremely difficult targets for a battleship, the morale of whose guns' and search-lights' crews would be badly shaken by the inevitable element of surprise. Moreover, their very numbers would be an additional safeguard besides ensuring the success of the attack, for an enemy fleet would find targets difficult both to find and to hold if, for example, thirty or forty M.T.B's were all manœuvring in the vicinity at high speeds.

In a rough sea by day the same argument applies, though the element of surprise could not be so complete. The attackers, whilst being able to see their huge targets clearly enough, would periodically be invisible to those in the enemy ships, being hidden either in the trough of the seas or by spray and foam. The enemy gunlayers, who would have difficulty enough in bringing their cross-wires on to so small an object under the most favourable conditions, would be still further handicapped, for the violent tossing of the attackers, in conjunction with the motion of the enemy vessels, would render them impossible targets.

It has been suggested that the M.T.B's would be useful for anti-submarine work or for coastal patrols. It seems unlikely, however, that this can be a serious intention. The old C.M.B's, it will be remembered, were employed in this manner, but in conjunction with aircraft, since it was easier to spot the " feather " of a periscope from the air than from low down on the water. The M.T.B's, in the absence of any anti-submarine installation, are no better off for picking up enemy submarines. Even when working with an aircraft patrol they would be faced with a hard task, for a submarine that is submerged and below periscope depth is virtually free from detection from the air, save on the clearest day and in shallow water at that. It seems probable, therfore, that the anti-submarine work of the future will be left to the specially equipped destroyers with the fleet or to the coastal sloops so equipped, in the case of local patrols.

Strategical Considerations

It is in the speed of the M.T.B's that their possibilities lie. A radius such as that quoted, in conjunction with the expected results of a night attack, must inevitably effect the entire strategical aspect of naval warfare, for it means that a force of these craft, suitably based, could easily strike at an enemy fleet passing within two hundred miles or even more. Sailing just after midday, the outward passage would take

some ten hours or less, bringing the attackers into contact with the enemy at any selected hour of the night. A successful attack would result in the enemy battle-fleet being badly crippled within striking distance of the base, leaving it at the mercy of either shore-based aircraft or a fleet which might have sailed soon after the M.T.B's and which could therefore be on the scene a few hours after the attack had developed.

Since the requirements of an M.T.B. base must be comparatively small, it would follow that the enemy, in the absence of any definite intelligence, would have to take all suitable points into consideration as potential bases, when planning his movements. To avoid all such points by such a margin as would place his fleet beyond the range of a striking force of M.T.B's would mean a severe handicap on his strategy.

Suggestions for the Future

Already other firms are experimenting in an endeavour to produce a still faster boat. This deserves encouragement, though it is not really speed so much as *endurance at high speed*, which is the essential future for such craft. It is on endurance that their strategical possibilities outlined above depend. Increased speed, moreover, necessitates a larger hull (the latest experimental type, said to be capable of fifty knots, is eighty feet long), and while this is permissible within certain limits, there comes a stage where the disadvantages of increased size, with a comparatively increased target and difficulty in handling, outweigh the advantages of a faster boat.

It is conceivable that such craft might well be carried in larger ships, either amongst the vessels of the battle-fleet or in specially constructed "carriers," analogous to the present-day aircraft carriers.[1] The value of a number of these boats as an adjunct to the fleet at sea must be undeniable since, as has been pointed out above, under certain circumstances they might well relieve the destroyer flotillas of the function of "fixing" the enemy—a function which, if carried out by the modern destroyers of over 1,300 tons, is bound to be attended by considerable losses, even if the required results are obtained. With destroyer displacements rising with each annual building programme, this must be an increasingly obvious consideration.

[1] Opportunities for using C.M.B's on the Belgian Coast in the Great War would have been far more frequent if one or more of the big monitors had been fitted to carry them—an easy matter in view of those vessels wide "bulges." This was suggested at the time, but the suggestion was not forwarded to the Admiralty.—Editor.

GERMAN NAVAL HISTORY OF THE GREAT WAR

NEARLY twelve years have elapsed since Volume V of the German Naval Official History on North Sea operations appeared in 1925. Now appears Volume VI, edited by Admiral Walter Gladisch.[1]

The volume takes up the story after Jutland, and covers the period from June, 1916, to Spring, 1917. Admiral Scheer's views of the situation after the battle were presented in a report of 4th July, 1916. Briefly he stated that the disadvantages of geographical situation and the great material superiority of the enemy would not enable the German fleet to master the blockade even if submarines were fully available for military purposes. The only real solution was unrestricted submarine warfare. Meanwhile the High Sea Fleet submarines continued to operate against the Grand Fleet, but with singularly little success.

The Sortie after Jutland

The principal episode in the volume is the sortie of the High Sea Fleet on 19th August, 1916—the last time the German fleet pushed right over towards the English coast. The fleet included fifteen battleships, and eight Zeppelins scouted ahead of it. Twenty-four submarines were stationed in positions to attack the Grand Fleet as the latter came down, with Commander Bauer, the Senior Officer of Submarines, on board of the "Prinzregent Luitpold" to control their movements. Scheer's object (p. 34) was "to bring the enemy to action under favourable conditions to be accomplished by a sortie of the High Sea Fleet (exclusive of the Second Squadron)[2] with extensive airship reconnaissance towards Sunderland; if the enemy is not met with or does not put to sea in time to interfere in superior force with our retirement, to bombard Sunderland, to force the English Fleet to come out and show England and the world the unbroken strength of the German fleet." The High Sea Fleet sailed. "E23"—Lieut.-Commander (now Rear-Admiral) R. R. Turner—was waiting in the Bight, and at 3 a.m. attacked the battle cruiser "Moltke," which opened fire on her. At 5 a.m. he attacked the battleship "Westfalen" and torpedoed her, when her wireless signals, made contrary to Scheer's orders, gave her position away. "E23" rose as soon as possible and signalled the event, and though the time of attack

[1] *Der Krieg zur See*, by Vice-Admiral Kurt Assman. *Der Kreig in der Nordsee*, by Admiral Walter Gladisch. Band VI: June, 1916–Spring, 1917. (Mittler und Sohn, Berlin, 1937).

[2] The old "Deutschland" class.

unfortunately was jambed, the fact was established that the German fleet was making for the English coast. The Grand Fleet was already out (unpleasantly soon as usual) and was on its way South. Scheer's strategy met with some success, for the light cruiser "Nottingham" was torpedoed and sunk by "U52" off Holy Island, and the "Falmouth" was sunk after being four times torpedoed by "U66" and "U63." Scheer was some 70 miles off the Yorkshire coast at noon, with the Grand Fleet coming down on him, when the Zeppelin "L13" reported Commodore Tyrwhitt's forces coming up from Harwich as battleships, and Scheer turned back. In the History "L13" is rather severely 'strafed' for her mistake, although it may well be regarded as a fortunate warning for Scheer, who with twenty battleships and battle cruisers was running into the Grand Fleet, under Jellicoe, with thirty-five. The control of the submarines from the "Prinzregent Luitpold" is commended.

At 8.30 p.m. "U52" and "U44" were right in the path of the Grand Fleet, then on its way back, but evidently the destroyers were too much for them, for "U44" only fired two torpedoes, both at the "Inflexible"; both missed. Altogether with twenty submarines out, twenty torpedoes were fired by six submarines, of which seven hit—three the "Nottingham" and four the "Falmouth"; thirteen missed.

The lesson of the importance of exactitude of position and careful confirmation in the case of air reports is specially stressed (p. 71). "Reliable co-operation in reconnaissance by air forces working with sea forces is only possible when the tactical schooling of the air forces lies with the fleet and is in the hand of the fleet commander" (p. 72).

A Mistaken Claim

The History makes the assertion that, as the result of this advance into the North Sea, the area South of the Tyne came under the "domination and practically uncontested influence of the High Sea Fleet" (p. 68). There is no foundation whatever for such a claim,[1] and it is regrettable

[1] The German historian may have been misled into making this claim by a curious omission in the British *Official History—Naval Operations*, Vol. IV, p. 48, which states that Jellicoe gave it as his opinion that "the fleet ought not to operate in the area South of Lat. 55°30′ N. and East of Long. 4°. E.," and that the Admiralty endorsed this view. But there was a most important qualification to this embargo which the British History does not mention but which is recorded by Jellicoe himself in his *The Grand Fleet*, 1914–16, p. 447, where he states ". . . it was clear that it was unwise to take the Fleet far into southern waters unless an adequate destroyer force was present to act as a submarine screen for all ships. *If the circumstances were exceptional and the need very pressing, it would be necessary to accept the risk.*" The words in (our) italics constitute this important omission, and indicate clearly that Jellicoe was not prepared to allow the German fleet to have the free run of the southern part of the North Sea.—Editor.

to find it in a work which, in general, is reliable and balanced. The object of sea warfare is to maintain communications by sea and to forbid them to an opponent. German shipping had long since been sunk or driven into harbour, from which it rarely emerged until after the War. On the 19th August, 1916, our coastal traffic was held up for fourteen hours: that was the only real effect of this sortie. Subsequently British and Allied shipping continued to go on its way up the North Sea as it did elsewhere. If the German fleet really had dominated the North Sea to the extent claimed, it might well have put Great Britain out of the War; but the History itself records that the result of the 19th August was to strengthen the German opinion that, although such sorties might damage an opponent, they would not lead to a decisive result.

On the other hand, the outstanding work of the submarine commanders directed Scheer's outlook more and more to their employment in unrestricted warfare against commerce. From this date the doings of the High Sea Fleet began to fade out, particularly when on 6th October, 1916, instructions were received from the Admiral Staff to commence submarine warfare according to prize regulations (i.e., restricted warfare by stopping and visiting) which precluded the further use of under-water craft in fleet operations. The Zeppelins, however, still remained available, and on 19th October eight of them rose and encircled the fleet as it made a short sortie from the Bight. Once again a Harwich submarine was on the lookout. "E38" (Lieutenant-Commander J. de B. Jessop) sighted it, and at 8.50 a.m. sent a torpedo into the light cruiser "München" and fired another at the "Berlin," which managed to escort her safely home. There was a heavy sea running, which prevented the German destroyers keeping up, and this, possibly in conjunction with "E38's" torpedoes, led Scheer to turn back to Horns Reef. This spelt the last movement of the High Sea Fleet as a whole, up to April, 1918.

The rest of the volume is concerned chiefly with airship attacks and operations from Flanders against the Dover Straits.

On 22nd October, 1916, H.M.S. "Vindex," aircraft carrier, escorted by Tyrwhitt's forces (five light cruisers and thirteen destroyers), entered the Bight to make a reconnaissance for an attack by coastal motor boats on Schillig Roads. Owing to bad weather the C.M.B. attack never materialized, but, though only two planes went up from the "Vindex" (Flight Commander H. T. Fowler and Flight Lieutenant T. N. Halsted), the German History states that they caused considerable commotion and put the whole defence system of the Bight into action.

The scene of activity tended to shift to the southward and, on

24th October, the Second and Ninth Destroyer Flotillas were sent round to Zeebrugge to support the Flanders submarines. This question of supporting the submarines came very much to the front in November, 1916. "U30's" engines gave out off Bergen; "U20" went to her help, and off the Danish coast had to take her in tow. Both ran ashore off Bovbjerg in a thick fog. The outpost forces hurried to their help and the Third Squadron (battleships), which was at sea at the time, was sent by Scheer to cruise in their support. On 5th November at 12.4 p.m. it was some 50 miles South-West of Bovbjerg, just turning to the South when the "Grosser Kürfurst" was hit by a torpedo, and the "Kronprinz" by another. The submarine was "J1"; her Commander (now Vice-Admiral) Noel Laurence, sighted four battleships looming indistinctly through the mist; there was a heavy swell running which made it difficult to keep the boat down, but he let go four torpedoes just as the battleships were beginning to draw away, and two of them found their mark. The damaged ships succeeded in getting in, but the "Kronprinz" was not repaired till December, and the "Grosser Kurfurst" till February, 1917. The Kaiser informed Scheer that the despatch of such a valuable portion of the High Sea Fleet merely for the protection of a submarine showed a lack of proportion, but he withdrew his opinion on receiving Scheer's report submitting that British submarines might be anywhere in the Bight (they certainly were!), and if the German Fleet were to avoid attack it must be tied to the rivers; every necessary precaution had been taken, such as high speed, zigzagging, and alteration of rendezvous.

The High Sea Fleet in 1917

In December, 1916, the High Sea Fleet was reorganized. The battle squadrons then consisted of:—

Fleet Flagship, "Friedrich der Grosse."

First Squadron, "Ostfriesland" (flag), "Thuringen," "Helgoland," "Oldenburg"; "Posen" (flag), "Rheinland," "Nassau," "Westfalen."

Third Squadron, "König" (flag), "Bayern," "Grosse Kurfürst," "Kronprinz," "Markgraf" (flag).

Fourth Squadron, "Prinzregent Luitpold," "König Albert," "Kaiserin," "Kaiser."

The battle cruisers were organized as:—

First Scouting Group, "Seydlitz" (flag), "Moltke," "Derfflinger," "Von der Tann."

The end of January, 1917, was marked by an encounter demonstrating clearly the uncertainty of night operations. The German Sixth Flotilla (eleven boats) was to proceed to Flanders from the Bight. The

Admiralty had intelligence of this move, and Commodore Tyrwhitt put to sea on 22nd January to intercept them with the "Centaur," five light cruisers and eleven destroyers. It was a dark clear night and very cold. At 2.45 a.m. the German destroyer "V.69" sighted the British light cruisers and fired two torpedoes at the "Aurora," which missed. Two shells got home on "V.69," wrecking the chart-house, disabling the steering gear and killing the flotilla leader. Commander Max Schultz, the commander of the boat, was stunned and was just recovering when "G.41" ran into him. "G.41" managed to reach Zeebrugge with nine dead and eight wounded on board. "V.69" crept away in the darkness, ran into the cruisers, came under fire again and was left for sinking, but managed to reach Ymuiden, in Holland. "S.50" got separated, came into a short sharp action with the "Simoon," and fired a torpedo, which got home with a heavy explosion which was seen for miles round; with eight men severely wounded she got to the Dutch coast, and so back to the Bight. The "Simoon," badly damaged off the Flanders coast, was sunk by British gunfire at 7.55 a.m. Such was the cold during the engagement, that the muzzles of some of the guns were blocked with ice. The History while dwelling on the commendable prowess of the German flotilla might have added some conclusions as to the difficulty and uncertainty of these sudden encounters in the dark.

On 9th January, 1917, the Kaiser gave his decision in favour of unrestricted submarine warfare. Captain von Leventzow, Scheer's Chief of Staff, had seen the Chancellor the day before and given him Scheer's opinion that this was an eminently suitable measure to do vital damage to England's industrial life (p. 170). He was not prepared to prophesy that England would be brought to her knees in so many months, but he estimated the probable sinkage at 500,000 tons a month.[1]

The Kaiser gave the order to commence unrestricted warfare on 1st February, 1917, and with this order, says the History, the whole direction of the war at sea assumed an entirely changed form. It became the principal task of the High Sea Fleet to ensure the safe entry and exit of submarines.

The History proceeds to recount the results of British minelaying in the Bight in 1916 up to January, 1917. Mines commenced to be laid by British submarines in the Bight in March, 1916, and from June, 1916, to January, 1917; as a result four German minesweeping vessels were sunk and four damaged. The German command was inclined at first to regard these fields as a help rather than a hindrance, as they tended to prevent British ships approaching the Bight; but as time went on

[1] The estimate was not extravagant. It averaged 597,606 tons per month by submarines for British, Allied and neutral vessels from 1st February to 30th June.

the minesweeping forces began to suffer heavily and had to be greatly increased.

Stress is laid on the importance of the submarine bases in Flanders. On 31st January, 1917, there were in the Flanders flotilla fourteen U.B. and twenty-four U.C.[1] boats, and in the Flanders command fifty-five front line aeroplanes. Their immediate opponent was the Dover patrol under Vice-Admiral Sir Reginald Bacon, which in 1916 mustered sixteen monitors, three flotilla leaders, and twenty-four destroyers. To these must be added a French flotilla at Dunkirk of five destroyers and eight torpedo boats. It appears from the History that Admiral Bacon's barrage of mines and nets laid off the Flanders coast on 24th April, 1916, gave them a lot of trouble, and it was not till the middle of May that they were able by indefatigable work to open a channel through it. It did not appear possible to keep the route open without reinforcements, and on 7th June the Second Destroyer flotilla was sent round from the Bight to Zeebrugge, reaching it safely after coming into action on 8th June with destroyers and monitors off the North Hinder, in which " V.67 " received a hit. The barrage continued to be troublesome, and on 12th July a destroyer, " G.102," ran on a mine and was towed in, not without difficulty, though fortunately the British monitors were not close at hand. It was not easy to be certain of a clear passage, and according to the German History a constant and energetic patrol by British forces, if this had been possible, would have produced a very difficult situation (p. 208). On 8th July, Admiral Bacon's 12-in. land battery brought the Tirpitz battery under effective fire, and its location from the air was greatly hampered by the British smoke screens. On 9th July three men were killed in Tirpitz battery, and the position of the British gun was not located till 20th July, and even then the smoke screens made it difficult to fire. The further attacks on Tirpitz did not meet with any notable success.

It was decided to make a night attack on the Dover patrol, and on 24th October the German Third and Ninth Flotillas arrived for this purpose at Zeebrugge from the Bight. There followed on the night of 26th–27th October a raid by these two flotillas and the Flanders half flotilla, under Commodore Michelsen. The account of it does not differ materially from that given in our *History of Naval Operations*, Vol. IV, p. 56. The German flotillas reached the Straits at 9.35 p.m. A number of armed drifters on patrol were sunk ; the destroyer " Flirt " was sunk by gunfire by the Sixth Half Flotilla. Commander H. W. Owen, R.N.R., in the yacht " Ombra," grasped what was happening and gave the general alarm at 10.20 p.m. For the rest, " S.36 " torpedoed

[1] U.C. boats were minelayers.

the destroyer " Nubian," and the transport " Queen," returning empty from Boulogne, was sunk by " S.60." It was all over in three hours, and fifty-seven transports crossed the Channel that night in safety. Admiral von Schroeder intended to make another raid as soon as possible, but the weather was bad up to 1st November; orders were issued for a raid on Margate, only to be cancelled when an air report came in of eleven battleships, eight cruisers, and forty torpedo boats off Gravelines (actually there was nothing there but two or three destroyers). The Third Flotilla went back to the Bight, and when the Ninth Flotilla followed it on 30th November activity off Dover waned during the rest of the winter.

Unrestricted Submarine Warfare

" The beginning of unrestricted warfare in February placed the war at sea on a fundamentally altered basis," says the History. " We enter into a new phase of the war, in which submarines are to strangle English maritime trade," wrote Admiral Scheer in his War Diary. It may be doubted whether the above view is strictly correct. The strategical position remained much the same, for submarines had already been attacking British shipping. By sinking at sight, the war against commerce was greatly intensified, but it may be doubted whether there was any fundamental change in the strategical situation. It was only the tactical use of the submarine that was changed.

Admiral Scheer was still desirous of making some use of the High Sea Fleet, and in February drew up a plan for a sortie into the Hoofden against the Hook to Harwich trade, but the Kaiser withheld his approval. The submarine campaign began to make larger and larger demands on the personnel of the High Sea Fleet, and British mine-laying was increasing. From 1st February to 1st May, 9,152 British mines were laid in the Bight, which resulted in the loss of twenty-six German mine-sweeping vessels and three destroyers. " U22 " was also mined on 6th April, but was towed in. Minefield 36, laid by the " Abdiel," " Royalist " and " Blanche " on 12th May off Horn Reefs, gave a lot of trouble, more particularly because it was laid near a German protective minefield, into which " U59 " managed to run on 14th May, and was sunk. This led to the closing of Way Blue—the route by Horn Reefs, and the opening of a route running West-North-West from the Ems—Way Yellow. This marks a stage when British minelaying began to be really troublesome in the Bight.

The latter portion of the book is taken up with the Flanders coast and raids on Dover Straits in February, March and April, 1917. For this

purpose the Sixth Flotilla [1] remained at the disposal of the Admiral commanding in Flanders,[2] and his own Zeebrugge flotilla was reinforced in 18th February by six destroyers and four torpedo boats.

There followed a destroyer raid in the Dover Straits on the night of 25th–26th February. The German account differs little from that given in the British *Official Naval History*.[3]

The German forces consisted of the Sixth Flotilla under Commander Tillesen, mustering only six destroyers; the First Half Flotilla, of five destroyers; and the Second Half Flotilla with three destroyers, altogether fourteen destroyers. The Sixth Flotilla was to attack the barrage; the Zeebrugge First Half Flotilla (Commander Albrecht) was to attack the ships off the North Foreland (in the Downs Patrol) and bombard Margate, and the Zeebrugge Second Half Flotilla (Lieut.-Commander Zander) was to attack trade on the Dutch coast. The night was fine and very dark. The barrage was attacked at 10.35 p.m. Six torpedoes were fired at the "Laverock," but only the sixth hit, and it did not explode. The "Laverock" opened a heavy fire and followed hard on the German force, which withdrew in the dark, just as Admiral Bacon, having received a signal from her at 11 p.m., put his forces in motion. Meanwhile the Ramsgate armed drifter "John Lincoln" had sighted a German destroyer off the North Foreland and sent up the green alarm rocket; the light cruisers and destroyers in the Downs had slipped already on hearing gunfire, and the German destroyers made off after bombarding Kent and missing the North Foreland wireless station, but unhappily killing a woman and child near it. The attack on Dutch traffic was equally fruitless, for it was not running that night.

The raid on 17th–18th March, 1917, was more serious. The German forces consisted of the Sixth Flotilla (Commander Tillesen, with seven destroyers), the Zeebrugge First Half Flotilla (Commander Konrad, with five destroyers), and the Second Half Flotilla (Lieut.-Commander Zander, with four destroyers)—altogether sixteen destroyers. The Sixth Flotilla and the First Half Flotilla were to attack the Barrage, and the Second Half Flotilla to attack the Downs. The destroyer "Paragon," patrolling on the Barrage, was making a challenge when she was sunk by two torpedoes. The "Laforey" hurried to the spot to

[1] A flotilla consisted of ten boats and a leader.

[2] Admiral des Marinekorps, Admiral von Schröder.

[3] Vol. IV, p. 363. It should be noted that there is a slight error in the *Official History*, where the barrage is the barrage after being shifted in June, 1917. The barrage in February, 1917, was still the same as in October, 1916. (*Official History*, Vol. IV, p. 54).

pick up survivors, thinking the " Paragon " had struck a mine. The " Llewellyn " switched on her searchlights and was hit by a torpedo, which just missed the " Laforey," but was not sunk. The " Broke " was then on her way with a strong force, and the German destroyers retired. Meanwhile Lieut.-Commander Zander had appeared off the Downs. The armed drifter " Paramount " (Lieutenant G. E. Johnson, R.N.R.) at once fired a green rocket (signal for enemy in sight) and dowsing every light, escaped unhurt under a heavy fire. The German destroyers circled round and torpedoed and sank the British S.S. " Greypoint," which was at anchor off Broadstairs. Some shells were fired at the county of Kent and hit three houses without casualties. The " Faulknor " and her division had slipped from Deal, but when they reached the North Foreland there was nothing there.

The German History points out that this renewed irruption (*einbruch*) into the Channel defence showed Admiral Bacon that it was not possible to guarantee that an enemy could be brought to action. On the other hand, Admiral Bacon might have said that what he particularly had to defend—namely, the shipping in the Downs and the transports crossing the Channel—had not been touched. What he did say was that sooner or later, too, these raids would receive a counterblow.

The Dover Patrol

Dover made a preliminary riposte on 7th April, when four coastal motor-boats from Dunkirk, under Lieutenant W. N. T. Beckett, R.N., made an attack on Zeebrugge, where the destroyers " V 81 " and " G 88 " were lying off the Mole. The attack came as a surprise, and the noise of the C.M.B. engines was reported as aircraft. At 11.15 p.m. Lieutenant Beckett sighted " V 81 " and fired a torpedo which hit her on the starboard side, but did not detonate, then sprang out of the water and exploded on the bottom. " V 81 " gave the alarm signal for submarines ; " G 88 " switched on his searchlights and almost immediately received a torpedo from C.M.B. No. 9 (Lieutenant Dayrell Reid, R.N.R.), which hit her in the boiler room : the boiler exploded and the boat sank.

A German raid on Dover barrage followed on 20th–21st April. The German force consisted of twelve boats from the Sixth Flotilla and Zeebrugge First Half Flotilla under Commander Gautier (six boats) and Lieut.-Commander Albrecht (six boats)—all of them the latest craft, armed with 4.1-in. guns. Gautier was to attack the Barrage on the Dover side, Albrecht on the Calais side. The " Swift " and " Broke " were patrolling that night off the Goodwins ; in the Downs were two

light cruisers and three destroyers; off Margate there were three destroyers; at Dover there were six destroyers in reserve—all ready to slip. At 11.15 p.m. Albrecht was off Calais and fired 300 shots into France. Off Dover at 11.30 p.m. the armed trawler "Sabreur" was suddenly wrapped in a storm of shell, but, dowsing every light, made off in the darkness and escaped with hardly any damage. Everything was silent again. The Dover destroyers slipped and made towards the Downs.

The "Swift"—Commander (now Vice-Admiral) A. M. Peck, and "Broke"—Commander (now Admiral Sir) Edward R. Evans, had made a short cast towards Calais and then, returning to their patrol, were making to the westward at 12 knots. The night was calm and very dark. It was 12.45 a.m. Suddenly on the port bow destroyers looming up—three or four steering roughly E.S.E. There was no challenging this time. It was "open fire,". "full speed"! The "Swift" and "Broke" both fired their torpedoes. The first group passed and vanished in the darkness. A second group loomed up. The "Swift" and "Broke" turned towards it. The former just missed ramming "G.85," but let go a torpedo which hit. The "Broke" crashed into the rear destroyer, "G.42," and they remained locked together firing at one another. Another torpedo from the "Broke" also caught "G.85." This was the famous fight of the "Swift" and "Broke," which incidentally fulfilled Admiral Bacon's prophecy and ended destroyer raids on Dover for the year 1917.

The volume closes with an account of the minor encounters on the Flanders coast between German destroyers, British coastal motor-boats and French torpedo boats, and of the bombardment of Zeebrugge on 12th May by the 15-in. gun monitors "Erebus," "Terror" and "Marshal Soult," supported by aircraft and destroyers. At 4.30 a.m. a heavy bombardment opened suddenly from the sea. Nothing could be seen of the bombarding forces and the shots fell nearer and nearer to the sluices without the German batteries being able to make any reply. A vigorous fight developed in the air, but it was not till 5.30 a.m. that an air message came through reporting four monitors [1] and thirty destroyers and Kaiser Wilhelm II Battery fired a few rounds ineffectively. The results according to the German History were relatively small: the lock-gates were not hit and the undertaking, though well prepared and skilfully executed, did not attain its object. It may be presumed, however, that the fall of 175 fifteen-in. shells within a hundred yards

[1] There were only three firing, but the "Sir John Moore" was providing an aiming light. There were only ten destroyers, but there were also six minesweepers and nineteen motor boats.

of the lock-gates left some impression on the town; in fact, all traffic was dislocated and the engine-house for the lock-gates was damaged.

In general, there is not a great deal in the German account of this phase of the war at sea which has not already appeared in the British *Official History* or in Admiral Bacon's *Dover Patrol*, but the volume gives a number of interesting details on the German side and maintains the high standard we have learnt to expect from its authors.

SINO-JAPANESE BACKGROUND

By Lieutenant C. Ravenhill, R.A.

IN order to appreciate fully the existing struggle that is taking place in the Far East, a knowledge of the background of that struggle is not only interesting, but really essential. The following brief study of the psychology and history of the Chinese and Japanese peoples may, therefore, enable the course and possible outcome of the present hostilities to be much more readily grasped and understood.

National Characteristics

The spy-mania of the Japanese is well known to anyone who has travelled in the Far East. On approaching Japan, the passenger must complete numerous forms—a task for which members of the Services are unquestionably well equipped; one of these forms requires the date of leaving Japan, the port of embarkation and the name of the vessel on which the passenger proposes to sail. During one of my trips to Japan, I decided to extend my visit for an extra week and booked a passage accordingly whilst in Japan. Less than half an hour after the original boat on which I had intended to leave had sailed from Kobe, a member of the Japanese Police Department was admitted to my apartment in a hotel ten miles away. I could not convince him, even after drinking much honourable tea, that the sole object of my extended visit was because I liked his beautiful country so much. And throughout the remainder of my stay I was trailed by an agent who, however, was of the greatest assistance to me a few days later, when I failed to obtain anything but raw fish to eat in an inn at which I was staying. The visitor to Japan must expect his baggage to be searched frequently and should he be so unwise as to photograph a junk in the Inland Sea, he is almost certain to spend a part of his leave in a Japanese prison.

The bravery of this people amounts to foolhardiness, for any people that can seriously consider and experiment with torpedoes guided by a man from inside deride the true quality of courage. In this case it was only when it was discovered that the occupant was killed by the shock of discharge that the volunteers, who offered themselves in large numbers, were refused. The present philosophy known as Kodo, which preaches that " the highest good is in the service of the State," has some resemblance to Fascism, though it is carried a great deal further and

plays an even more important part in a people who are easily convinced that an open gate to Heaven awaits any martyr for the State.

By contrast, the most prominent national traits of the Chinese may be defined as universal poverty, honesty and *laissez-faire*. The Chinese are the poorest people in the world : in many instances a family of seven or eight will live in a small stone shack together with a few pigs and chickens. A Chinese labourer is fortunate if he earns more than sixpence for a day's work. To these people, who lose millions every year in famines, floods and typhoons, life is often a burden, and quick release is welcomed by many. The bombing of open towns, killing possibly a few hundred civilians, is not going to affect the morale of a country whose total population exceeds 400 millions and who are used to losing millions every year through disasters of one sort or another.

That honesty is a national characteristic of the Chinese people is a disputable question, but the essential difference between Western and Eastern honesty is the matter of "squeeze" ; for throughout the East, and notably in China, every party to a transaction must obtain a certain profit from that transaction in addition to that which he originally anticipated. But fundamentally the Chinese are an honest race, which is aptly proved by the fact that until very recent years all contracts in this vast country were verbal, and even with Western nations written contracts did not exist.

Perhaps the spirit of *laissez-faire*, of slow compliance and of putting things off till the morrow, is the most exasperating and uppermost trait of the Chinese people. A people whose state of civilization has remained stagnant so long is one to give assurances readily, but to take a great time to carry them out. Here lies the main difficulty of conducting business with the Chinese, and therefore every transaction must have a time limit imposed on it, and a system of fines for default is normally employed by Europeans in order to ensure the completion of any deal by any given date.

The main contrast psychologically, however, between the two peoples lies in the unit of the nation. In Japan the unit is the State, in China it is the family. It is loyalty and moral obligations towards the unit that has so altered the paths of the two peoples. Possibly the present struggle will strengthen the seeds of nationalism in China sowed by Dr. Sun Yat-sen so that in time the State may replace the family as the unit of the Chinese people.

Opening of China and Japan to Trade

Records exist which show that as early as 1770 the East India Company was trading with China. As time passed, tea became more

essential to Britain, but the only commodity that the Chinese merchants would exchange for it was opium. Opium was not officially allowed to enter the country, and all foreigners were considered inferior by the Chinese and were compelled to *kowtow* and acknowledge the fact in humiliating terms. The refusal of the Chinese Emperor to receive the British Ambassador on a diplomatic footing and the seizure in 1839 of a cargo of opium led to war between Great Britain and China, as a result of which Hong Kong was ceded to us, and the Treaty Ports were opened for unfettered trade to all nations.

Japan, alarmed at the progress of Jesuit missionaries, closed the entire country to Europeans in the XVIIIth Century, except for a small Dutch factory at Nagasaki. It was not until 1853, when the United States sent Commodore Perry with an armed squadron to enforce their demand, that Japan opened her ports to Western trade.

Thus, though there was an illicit opium trade in full swing in the case of China, a hundred years ago both countries were closed to Western trade and Western contacts.

Pre-War History

As a result of the revolution in 1867, Japan discarded her Samurai or feudal system and emerged a nation, and the original Shinto religion developed into a strict obedience of the Mikado's commands; in fact patriotism became the religion of Japan.

The Western Powers soon began to divide China into spheres of influence, and Japan looked anxiously towards Korea, which pointed seemingly at the heart of the Empire. In 1894 she fought China, who was of course totally incapable of actively protecting this outlying province, and Japan set up the independent Kingdom of Korea. In the light of recent events it is interesting to note that in 1905 she proceeded to annex Korea, in spite of many assurances to the contrary. Thus she prevented Russia from obtaining possession of this peninsula, the occupation of which by a Western Power would have threatened her independence.

The year 1905 saw Japan emerge a World Power as the result of her defeat of Russia. She made many mistakes in the field, and in some cases paid dearly for them, but the spirit of Kodo was present and her armies made up for what they lacked in experience and leadership by sheer physical courage and the will to win.

Political Parties in Japan

Soon after the revolution in Japan, the large part of the nation's financial interests were found to be in the hands of about seven or eight groups or families. These groups formed themselves into two political

parties, the Seiyukai supported by the Mitsui group and their followers, and the Minseito supported by the Mitsubishi group and their backers. Both these parties were in favour of pursuing a policy of peace: the policy of both concerned the industrialization of the country on a large scale, and though their respective methods differed, the ultimate aims of each party were similar.

Opposed to both these parties was, and still is, "The Camp"—a non-political party of militarists whose theory is that Japan should have the strongest army and navy in the world and that she should accomplish her means by conquest and force of arms. It is hardly necessary to say here that this party are at present all-powerful and are hotly pursuing their policy, though strongly opposed by many clear-minded politicians and industrialists throughout the country.

The Economic Crisis of 1930

After the Great War, Japan, controlled alternately by the Seiyukai or Minseito parties, pursued a policy of peaceful development, and her peaceful intentions towards China are well illustrated by the return of the Shantung Peninsula in 1921. She abandoned her ambition of naval supremacy at the Washington Conference and accepted the principle of the "Open Door to China." Cheap labour, long working hours and superb organization enabled her to stimulate her cotton industry until she threatened Lancashire itself.

Then, in 1930, the World economic crisis hit her. In no other country were the results so severe. In one year her trade fell by over a third, and the small land-owner, who had previously been able to make a small but comfortable profit, was now faced with ruin. The inevitable reaction was that the people laid the blame at the feet of the political parties and, seeking some alternative, concluded that "The Camp" had been right after all.

Japan's Major Problems

The direct result of the industrial revolution in Japan confronted her with two great problems. In seventy years her population had increased threefold. The obvious solution to her population problem was emigration. But apart from the fact that the Japanese are lovers and worshippers of their native land and not inclined to emigrate voluntarily, there was no space for colonization with the doors of Australia and America closed.

The solution appeared to be that Japan should become a great manufacturing and exporting country; but in this she is greatly handicapped by the absence of raw materials, coal and iron ore: in fact silk is the only manufacturing raw material that can be produced in the country itself. Her position remains precarious and her

problems of surplus population and raw materials are still unsolved.

It was with the object of solving those problems that the Manchurian adventure was undertaken in 1932. The success of the Japanese forces enhanced the power of "The Camp" until they were in the position of a virtual dictatorship, but it did not provide the solution of those two major problems. Financially, the virtual annexation has been a failure and the only emigrants are a few retired army officers and railway officials. The only tangible result abroad has been to lose foreign sympathy and to earn the enmity and distrust of those Powers which formed the League of Nations.

Retrospect

Previous internal victories and defeats in China have normally been settled by silver bullets, that is to say by bribes, and during the Manchurian campaign there is little doubt that the Japanese conquered much territory by this method. But China now has a leader who appears to possess that singularly un-Chinese trait, incorruptibility. During the past two years, she has made most remarkable progress under Chiang Kai-Shek: his victory over the Southern War-Lords, peace at last with the Communists, the general return of self-confidence, and the feeling that Japan was on the retreat have all greatly increased his power, and he has assured the world that he is determined to resist Japanese aggression to the last. It is impossible to conquer 400 million people, and more difficult still to demoralize the Chinese, especially after their universally acclaimed magnificent resistance at Shanghai. Japan's financial commitments are already enormous, the possibility of revolt in Manchuria necessitates her keeping five divisions there permanently, and her position *vis-à-vis* Russia will be greatly weakened if she emerges from the war exhausted and financially drained.

Above all, is a complete victory going to give a permanent solution to her major problems? She is certain to seize the control of the coal, iron, wool and cotton reserves in North China, but this may involve serious complications with Western Powers, as foreign capital is invested in several of the mines. It is unlikely that she will solve her surplus population problem in China, and still less likely that any trade terms dictated to China at the conclusion of hostilities will be maintained for long, especially in the face of Western and American opposition.

In conclusion, it is suggested that except in so far as the seizure of a certain amount of raw materials and the dictation of a trade treaty to China, which in view of existing circumstances can only be of a temporary nature, will mitigate them, Japan will still await a solution of her major problems at the conclusion of the present "undeclared war."

THE INTERNATIONAL SITUATION

INTERNATIONAL RELATIONS

IT is remarkable that, with the Spanish Civil War dividing the principal European nations into two political camps and a major conflict raging in the Far East, the relations of those Powers who are not active participants in the fighting should be, if anything, rather better than they have been for some time.

There are numerous factors which are influencing this state of affairs; probably the most important is that it is widely realized that the two strongest advocates for peace—Britain and the United States—are the two nations which are, on the whole, best prepared for war. If our association with the League of Nations has taught us nothing else, it has at least made obvious the stupidity of trying to achieve by moral persuasion what, when it comes to a "show down," can only be attained by force of arms. It has shown us, too, the great danger of helping to create extreme tension by threatening collective interference when collective "counter aggression" in military form is a mere mirage. We have, it is to be hoped, learnt our lesson: instead of failing conspicuously to organize collective interference at Geneva, we have been fairly successful in promoting a semblance of collective "non-intervention" in London.

To give credit where credit is due, Germany seems to be helping to supply a steadying influence in international affairs. Her critics may say that if this is so it is because she is not ready either as regards arms or money to pursue a bellicose policy. Be that as it may, Herr Hitler has refused to join forces with Signor Mussolini in his efforts to bait Britain. Germany and Italy have allied themselves with Japan as an anti-Communist Power, but there is no evidence that they are adding to difficulties in the Far East; indeed they have every inducement to join forces with other European nations to protect common interests.

In Spain the issue still hangs in the balance. The danger of international complications arising out of the Civil War is by no means over. If the course of events should yet go badly for Franco, it might well lead to redoubled efforts by Italy and Germany to support him against a "Red" regime. On the other hand, if he meets with further success and seems likely to make an end of the Valencia government, Russia and France may be spurred to greater activities. Of this choice of

evils, the latter appears the least if only from the point of view of preventing the conflagration from spreading; for Russia could do little for Spain without the assistance of France, and the latter is deeply committed to stand by us in our policy of non-intervention.

There is no gainsaying that in the Far East we have had to tolerate a number of minor insults from the swollen-headed and sometimes ill-disciplined Japanese army of occupation in China. These have been a sore trial to our national pride and temper, and apologies have become so automatic that they are ceasing to ease the strain. It may seem humiliating that we are not in a position to send a sufficient force out to preserve our prestige and our interests in that part of the world; but for that we have only the years of pacifism and idealism, which whittled our fighting Services to the bone, to blame: we may be thankful that we are not in a far more humiliating position at home. Meanwhile it is a mistake to think that Japan must continue to have matters all her own way. It is true that the Brussels Conference proved just as futile as many similar Conferences at Geneva when it came to getting any group of Powers to take collective *action* against—as distinct to making collective *protests* to—an aggressor. None was ready to take up arms to prevent Japan overrunning China, and the Chinese, like the Abyssinians, called on their League brothers and others who might help them in vain. But China has been invaded before—so has Russia, and history seems to show that penetration into these vast countries is liable to lead to the exhaustion of the invader. It is rather like putting a finger into a rubber ball: unless the pressure is maintained unceasingly, the ball will eventually push the finger out and resume its former shape. There may well come a time when it will be very difficult for Japan to keep up her pressure in China unaided, and possibly it has not occurred to her strategists that, although we may not be in a position to thwart her at the moment, we are in a very strong position to prevent her receiving active support from any foreign source from which she might hope to obtain it.

British sympathies, rightly or wrongly, are wont to be extended to the "under dog," and in the present conflict they are undoubtedly with the Chinese. Yet there is a distinct element of risk in the war ending in an exhausted and impoverished Japan. Soviet-Russia might seize such an opportunity to launch an offensive in Manchukuo, consolidate her position in Eastern Asia, overrun Korea, and even corrupt Japan internally. There is a real danger that the supreme importance of "face" to the Oriental, apart from the ambitions of the military caucus which now dominates the nation, may lead to her overreaching her strength; in which event she may have to look to Powers whom to-day she may

regard as unfriendly, though impotent, neutrals to use their influence to save her from disaster.

THE SINO-JAPANESE WAR

SINCE the beginning of November, 1937, when the last instalment of these notes was written, the Chinese forces have suffered an almost uninterrupted series of defeats by land, sea and in the air, and have been driven back in confusion practically at all points. It might, therefore, seem natural to assume that the end of the war must be in sight and that the Japanese will soon be masters of the situation. But before jumping to such a conclusion it is as well to take a small-scale atlas and get a correct appreciation of the geographical situation of the opposing forces.

Even a brief examination of such a map will disclose that, after the fall of Nanking, the Japanese armies still have more than a thousand miles to advance up the Yangtse river before they can get within artillery range of Marshal Chiang-Kai-Shek's new Headquarters at Chungking in far off Szechwan. In spite of their numerous successes therefore, the Japanese have so far only scratched the surface of China and, provided always that the growing spirit of Chinese nationalism can stand the strain, the future responsibilities of the Japanese General Staff are by no means to be envied.

THE NANKING–SHANGHAI LINE

With the coming of winter in North China and the enhanced difficulties of conducting active operations amidst snow and ice, the centre of interest shifted South to the Nanking-Shanghai line. In the Shanghai area, the Japanese forces resumed, on 7th November, 1937, their thrust against the southerly sectors of the Chinese defences, captured the Pootung suburb, bridged the Soochow Creek and turned the Chinese extreme right flank by landing troops in Hangchow Bay. The Chinese thereupon, withdrew to the general line Kiangyin (on the Yangtse River)–Wusih–Soochow City–Kashing, which they had entrenched previously with the object of shielding Nanking. They also evacuated the Nantao district of Shanghai, leaving behind some 6,000 disorganized and beaten soldiers as refugees in the French Concession.

The Japanese air arm was active at this time and their aircraft bombed the famous " Blue Express " at a point on the railway about 150 miles from Nanking, inflicting some 200 casualties upon the unfortunate passengers. Owing possibly to their heavy losses and lack of success in the Shanghai area, the Chinese troops failed to resist with their usual tenacity and on 20th November, 1937, allowed the Japanese

to break through the Soochow city sector of their entrenched positions. The way for the Japanese victory was paved by a series of enveloping movements from the Yangtse River in the North and from Hangchow Bay in the South. Both these manœuvres were, it should be observed, directly dependant on and due to the effective control of the sea-communications by the Japanese Navy.

As the invaders had penetrated to within a few marches of Nanking, Marshal Chiang-Kai-Shek—the Chinese Generalissimo, was forced to dismantle the Government offices there, to re-establish the Ministries of Foreign Affairs and Finance at Hankow, and to set up a new capital at Chungking.

SHANGHAI

The tide of battle having flowed away to the North-West, the Japanese military control of the Shanghai area was now complete, and General Matsui—Japanese Commander-in-Chief, formulated a series of of " demands " to the Shanghai Municipal Council and took over the Customs, and Postal and Telegraphic services. These " demands " included :—

(*a*) An increase of Japanese police in the settlement.
(*b*) The appointment of Japanese officials to " key " posts in the Council's administration.
(*c*) An increase in the number of Japanese employed on the Council's staff.

The Governments of Great Britain, the United States and France, are engaged upon a study of these " demands," which are generally considered to be an infringement of European rights.

On 3rd December, 1937, a tense situation was created by the insistence of the Japanese Higher Command on a " Victory march " which was to take place through the centre of the International Settlement. Great Britain and the United States both protested against this parade as being " provocative and unnecessary," but without result. Some 6,000 Japanese troops, escorted by small bodies of municipal police, marched through the streets, crowded with Chinese refugees from the war zone. The inevitable happened : a Chinaman in civilian dress threw a bomb into the Japanese ranks wounding some of the soldiers, some Chinese policemen and a European police inspector. The assailant was shot down immediately by a Chinese policeman and after a day of confusion and extreme tension, the Japanese were persuaded to withdraw peacefully from the Settlement. The local French authorities, however, refused permission for the Japanese troops to enter the French Concession, which stands on a different legal footing to the Inter-

national settlement, and after some anxious moments, carried their point.

In January, 1938, there has been a recrudescence of International incidents in the Shanghai municipal area. Japanese troops have assaulted British police officers acting in the execution of their duty, have hauled down the Union Jack from the flagstaff of a British owned hotel, and when prevented from beating Chinese women, have trained machine guns on members of the International Police Force. The American Chairman of the Municipal Council has delivered a strong protest to the Japanese military authorities.

SUGGESTED PEACE TERMS

Having secured most of the objectives which they had set themselves, the Japanese began to show symptoms of willingness to negotiate with the Chinese authorities. With this object in view, Dr. Trautmann—German Ambassador to China, acting on behalf of Japan, visited Marshal Chiang-Kai-Shek in Nanking on 9th December, 1937, and offered the mediation of his Government. The Marshal, who had previously declared that China would not accept mediation outside the framework of the Brussels conference, refused to consider the German offer and decided to continue the struggle. According to reliable reports, these terms included :—

(1) Repudiation of Communism and co-operation with Japan.
(2) Economic co-operation between China and Japan.
(3) Acknowledgment of China's liability for the course of Japanese military operations.
(4) Recognition of Manchukuo.
(5) Creation of a " demilitarized " zone round Shanghai and " other places."
(6) China to accept Japanese military advisers and to permit the occupation of " certain places " by Japanese garrisons.

The wording of the terms appears to have been deliberately vague so as to leave numerous loopholes for an extension of future Japanese activities. In any case, their acceptance by Marshal Chiang-Kai-Shek would have meant the end of China's independence.

THE FALL OF NANKING

With the arrival of new divisions at Nanking under the command of General Tangsheng-Shi, the Chinese garrison offered a determined resistance to the Japanese columns. The latter, however, after several furious assaults, succeeded in carrying one of the gates of the city and

forty-eight hours later, on 13th December last, they made themselves masters of the capital.

The Japanese flanking column from Hangchow Bay, marching South of the Soochow lake district reached the Yangtse at Wuhu, about 65 miles up-stream from Nanking. This well-timed strategical manœuvre severed the Chinese main line of retreat to the South.

Marshal Chiang-Kai-Shek, who remained in the capital to the last possible moment, escaped safely by air, hotly pursued by Japanese aircraft for part of his flight, and set to work immediately upon the organization of fresh defences at Pengpu, 100 miles North-West of Nanking and Anking, midway between Nanking and Hankow. An air base is also to be established at Nanchang, 200 miles South-East of Hankow.

After consolidating their hold on Nanking, the Japanese Commanders staged an important operation towards the North along the line Pukow–Pengpu–Suchow, where 300,000 Chinese troops had been concentrated. Suchow is a railway junction of marked strategical value and forms the central link between the North and South Tientsin–Suchow–Pukow Railway and the East and West Haichow–Suchow–Honan line. Marshal Chiang-Kai-Shek handed over the Premiership to Mr. H. H. Hung—Minister of Finance and flew to Suchow in order to take personal control of the operations.

After conviction by General Court-Martial of disobedience of orders and dereliction of duty, many senior Chinese officers, including General Han–Fu–Chu—late Governor of Shantung Province, have faced the firing squad.

The strategic situation of this Chinese Army appears, however, to be definitely unsound. After the fall of Tsinan—the capital of Shantung, the Japanese Eastern Group, which had advanced from Tientsin, split up into two detachments, one marching East on Tsingtao, the other pushing Southwards, thus threatening the Suchow garrison in the rear. There is only one line of retreat, via Kaifeng to the West, open to the Chinese troops in this area. And if the Japanese succeed in bringing off one of their favourite enveloping manœuvres so as to cut this line, the strategical position of this mass of Chinese troops will become desperate. For the moment, however, winter weather with snow-bound roads is holding up operations in Kiangsu and decisive results may be delayed for some little time.

NAVAL EPISODES

JAPAN

The Japanese navy has played a very active part in the operations round Shanghai. Having covered the evacuation of their nationals from the Yangtse valley, the river flotilla assembled off the port on

9th August last. At the entrance to the Whangpu River was the 8th Squadron, consisting of five light cruisers, and the 2nd, 9th, and 21st destroyer flotillas. In the Saddle Islands—75 miles to the South East—was an aircraft carrier and hospital ships. Vice-Admiral Hasegawa, commanding the local naval forces, was flying his flag in the old coast-defence ship " Idzumo," berthed alongside the Japanese Consulate-General.

On the outbreak of hostilities, on 13th August, ships off Wusung supported the naval landing party by putting down a barrage between it and the advancing Chinese. The next day cruisers shelled objectives occupied by the enemy, firing under way in the Yangtse at long ranges, while destroyers blazed into the village of Wusung at close quarters.

The " Idzumo " was the object of numerous attacks. Bombs were dropped near her on several occasions, but only caused damage to life and property in the town. Fire was opened with anti-aircraft guns from the ships, but does not appear to have been effective. On 16th August, the " Idzumo " was attacked by a coastal motor boat ; but the torpedo missed its mark and ran into the wharf just astern of her. However, after this she hauled off from the wall and took up a new position in mid-stream. The flagship was a constant target for snipers from the shore, and for days on end the crew had to live with hatches and scuttles closed in very hot weather. Some destroyers and gunboats stationed at intervals in the river were hit by small shells, and the Japanese complain that two hospital ships, the " America Maru " and the " Ashi Maru " were made the objects of " wanton attacks "—the former by Chinese artillery which caused several casualties on board, and the latter by aircraft which did no damage.

On 3rd September, a Japanese warship landed a party of Marines and occupied Pratas Island where there was a Chinese wireless Station The Island lies 180 miles South-East of Hong Kong. In the vicinity of that port, a Chinese customs vessel was interfered with inside British territorial waters.

The Japanese naval air service has been exceedingly active in most theatres of the war, and has indulged in a great deal of indiscriminate bombing—sometimes with most unfortunate results from a diplomatic point of view.

There is considerable jealousy and rivalry between the Japanese army and navy, and a resulting tendency for each service to try to outdo the other and acquire more " face."

CHINA

The Chinese navy seems to be virtually blotted out. It has played no noticeable part in the war and a number of ships have been simply

" sitting targets " for Japanese bombers. The new 2,500-ton cruiser " Ning Hai," built in Japan, has been sunk, and her sister ship, the " Ping Hai," built at Shanghai, was badly damaged and beached. The old cruisers " Hai Chou," " Ying Jui," and " Chao Ho " have all been sunk by bombs. The 1,650-ton cruiser " Yai Sen " is reported to have been set on fire and submerged near Nanking. A number of smaller craft have also been lost or badly damaged and, by now, the latter are probably in the enemy's hands.

These vessels were all unarmoured, and they had little or no defence against enemy air attacks; moreover, they all appear to have been lying at anchor in narrow water-ways when they were attacked.

GREAT BRITAIN

The position of the Naval Commander-in-Chief, the Rear-Admirals in the Yangtse (who were in the process of relieving in command), and the Captains and officers of H.M. Ships on the China station has been an exceedingly difficult one ever since the war broke out. In company with the Sister Service, especially in Shanghai, they have had to maintain British interests, afford such relief as they could to our own and other nationals who were victims of the fighting, deal with an exceedingly truculent and sometimes deliberately offensive invader with tact and firmness; yet knowing that on no account must they be drawn into an international incident which might have serious consequences.

Particularly provocative was the attack made on the river gunboat, H.M.S. " Ladybird," on 12th December. This little vessel, commanded by Lieutenant-Commander H. D. Barlow, R.N., had got under way to protest against British ships anchored just below Wuhu being machine-gunned, despite Japanese assurances of their safety. She endeavoured to draw off the fire, whereupon a field battery opened on her at point blank range. The " Ladybird " steamed for the battery until she was so close that the guns could not be depressed enough to bear on her. The ship was hit six times, and one shell exploded on the stokers' mess deck, killing a Sick Berth Attendant. Captain G. E. M. O'Donnell, Flag-Captain to the Rear-Admiral, Yangtse, who was on board, was wounded in the hand by a piece of shrapnel while on the bridge. H.M. river gunboat " Bee," which arrived on the scene from Hankow with Rear-Admiral R. V. Holt, who was acting as Chief-of-Staff to the Rear-Admiral, Yangtse, was also fired at.

When the commander of H.M.S. " Bee " landed to protest, he was informed by Colonel Hashimoto, the senior Japanese military officer then at Wuhu, that the firing on the warships was due to a mistake, but that he had orders to fire on every ship on the river. At a later interview

the same officer stated categorically that if any ships moved on the river they would be fired on, and despite protests, H.M. ships " Bee " and " Ladybird," after berthing, remained covered by guns at point-blank range; but the threat was ignored and the " Bee " was not molested when she got under way.

On the same day the " Bee," " Cricket," and " Scarab," and a British steamer were attacked from the air, but the aeroplanes were driven off by anti-aircraft fire from the gunboats.

Following strong representations to the Japanese Government by the British Ambassador in Tokyo, a profound apology was received, and the Ambassador was informed " that the Imperial Government immediately took the necessary measures to prevent the recurrence of incidents of this nature." The Government undertook " to deal suitably with those responsible for the incidents immediately on completion of their investigations " and " to pay the necessary compensation for damage to your country." It is understood that Colonel Hashimoto was removed to another command.

UNITED STATES

If the " Ladybird " incident caused strong resentment in this country, the sinking of the U.S. gunboat " Panay " produced far more commotion in America. On the same day as the British ship was attacked—12th December, the " Panay " was moving up-river from Nanking to get clear of the assault on that town, when she was attacked repeatedly by Japanese aircraft. She was hit by bombs and abandoned in a sinking condition. Three men were killed, including an Italian journalist who had taken refuge on board, and fifteen wounded. The remainder of a crew numbering about seventy made their way to the river banks from whence H.M.S. " Bee " was instrumental in rescuing many of them. The " Panay " was machine-gunned from a Japanese military launch and boarded after she had been bombed, and survivors were fired on while they were making their way ashore.

On the same day, three Standard Oil Co. tankers were bombed and set on fire, causing nearly a hundred deaths, mostly amongst the Chinese crew. All four ships were flying the American flag and the local Japanese authorities knew where they were.

The President of the United States took the unusual step of causing a note of protest to be handed to the Japanese Ambassador in Washington " for transmission to the Emperor." This was a shrewd move as it was most likely to ensure that the high command in Tokyo, would pay very special attention to the complaint. Apologies, reparations, and action to prevent the recurrence of such incidents were also demanded.

On 24th December, the Japanese reply was received claiming that the bombing was accidental, but that strict orders had been given to the Army, the Navy and the Foreign Office to refrain from infringing any foreign interests ; it was observed that guarantees and indemnifications had already been promised, and that the officer in command of the Japanese flying operations, Rear-Admiral Mitsunami, had been recalled for failure to take full precautions. On 29th December, Mr. Saito, the Japanese Ambassador in Washington broadcast an apology to the American nation for the sinking of the " Panay " in which he alluded to a " shocking blunder."

The United States government evidently feel that " honour has been served " ; but the incident has undoubtedly assisted to pave the way for a policy of strengthening America's navy and army in order to be ready for any eventualities which may yet arise.

THE SPANISH CIVIL WAR

THE Spanish Government's " New Armies " have emerged from their ordeal by battle with flying colours, and with the loss of Teruel on 7th January, 1938, General Franco has suffered his first important reverse. The battle opened on 15th December, 1937, when Government troops, believed to include the VIII, XIII, XVIII, XIX, XX and XXII Army Corps and one mechanized Division launched a surprise attack on the Insurgent forces at Teruel, a significant strategical point on the Catalayud–Valencia line. The Insurgent troops, estimated at only about 10,000, occupied an extended salient position on the heights round Teruel. The Government forces planned to pinch out the salient by simultaneous attacks from the North-East and South-West, while other forces maintained a steady pressure on the Nationalist centre. With this object in view, the XXII Corps developed an out-flanking manœuvre on the right, along the axis Tortajada–Concud ; the XIX Corps hammered its way up the centre, astride the Cuenca–Teruel road, and other Government troops enveloped the left flank of the salient. The Insurgent troops, under the command of Colonel Rey, put up a gallant defence but were heavily outnumbered and outgunned. Fierce air fighting took place, but without decisive advantage to either side. Owing to ice-bound roads, the mechanized troops of both armies found themselves heavily handicapped and the transport lorries experienced terrible difficulties in supplying the forward Divisions. Weak Insurgent relief columns marching up from the North-West were beaten off, the Insurgent lines were broken and Colonel Rey, with 1,500 men and some guns, was forced to surrender.

General Franco displayed much rancour against Colonel Rey, who, he alleged, had neglected his duties. Colonel Rey, for his part, stated that he had repeatedly implored Insurgent Headquarters to send him reinforcements, but was put off on the plea that the Government offensive was of purely local significance.

General Franco, stung by this unexpected reverse, despatched additional reinforcements, amounting to about three Divisions, under the command of General Aranda, with orders to retake the lost positions at all costs. After a series of desperate counter-attacks in bitter winter weather, the Insurgent troops have so far succeeded in retaking only part of the lost ground, while the Government forces have consolidated their grip on Teruel.

Nationalist aircraft have carried out numerous raids on Barcelona, Valencia and other places, remote from the fighting zone, and have killed large numbers of non-combatants. The Government, after giving due warning, ordered air raids on Salamanca and Badajos, as a reprisal.

This Government victory is expected to have far-reaching results and may well have dislocated the Insurgent plans for their Spring offensive and burnt up part of their reserves. For the first time, the Governments' new troops have demonstrated their ability to carry out a planned manœuvre and to deliver a smashing blow The initiative, moreover, which has lain so long with General Franco, shows distinct signs of passing into the Government's hands. In spite of their imposing territorial gains, the military situation no longer appears to be so decidedly in favour of the Insurgents as heretofore. With the coming of Spring, the course of the operations promises to be interesting, instructive and possibly even sensational.

CORRESPONDENCE

[*Correspondence is invited on subjects which have been dealt with in the* JOURNAL, *or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, but publication of letters will be dependent on the space available in each number of the* JOURNAL.—EDITOR.]

ALDERSHOT COMMAND INTER-DIVISIONAL EXERCISE, 1937.

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—I am distressed to note that in the report published in the JOURNAL of the Aldershot Command Inter-Divisional Exercises the author dismisses the part played by the Royal Air Force in one brief paragraph. The part played by an arm which was co-operating continuously day and night throughout the exercise cannot surely be thus dealt with and thereafter forgotten ?

Amid the din of mechanized vehicles in motion, did the author himself forget the presence of aircraft overhead ? One is led to suggest that aircraft are able to approach unheard above this din, and thus obtain the full effect of surprise in attacking mechanized formations on the move. Did the exercise provide any information on this point ?

Furthermore, in the encircling movement on the second day, which came so near to success, were his reconnaissance aircraft entirely unable to provide the 5th Brigade commander with information on those vital points as to whether strong enemy reinforcements had made, or were about to make, their appearance on the battlefield, or whether the whole 11th Brigade was in the Buntingford-Brent Pelham-Braughing area ? It would appear that reliable information on these points would have made all the difference between nearly succeeding and complete success.

" CURIOSITY."

Abu Sueir, Egypt.

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—Your correspondent " Curiosity " raises three main points. I shall do my best to deal with them seriatim.

Firstly, the primary object that those who framed the Exercises had in mind was to practice Army units and formations in mechanized manœuvres and tactics. In so far as the Royal Air Force were concerned, their principal role was to provide a strong air element without which any Army exercises now-a-days would be almost entirely lacking in realism. A secondary object, no doubt, was to afford R.A.F. pilots practice in detecting the movements of bodies of troops and in launching air attacks on mechanized formations. But, as implied in the title of the Exercise, the Army on this occasion enjoyed the principal role. Nor does it appear quite fair to allege that in my brief account the part played by the air arm was either " dismissed " or " forgotten." The paragraph dealing with the R.A.F.—although short—paid them, in my opinion, a handsome tribute and I should be extremely

sorry if there had been any misunderstanding on that point. Nevertheless, the bulk of the limited space at my disposal had of necessity to be devoted to the activities of the Army.

Secondly, there is, it is thought, little weight in the suggestion that owing to the din created by mechanized formations on the march, aircraft may be able to approach unheard. The majority of vehicles move silently on pneumatic tyres. Only in the case of tanks and medium artillery is the clatter really so very overpowering. A sharp look-out, moreover, is kept by air sentries and, during a mechanized march, a proportion of A.A. weapons remains halted in selected positions instantly ready to engage any aircraft that may attempt to harass the column.

Lastly, the weather conditions on the second day were bad: heavy rain with thick clouds and low visibility. For reasons of safety, the activities of the air squadrons attached to the "Government" forces were restricted by higher authority and they were unable to send up a full number of sorties. Nevertheless, they succeeded in locating with considerable accuracy the bulk of the troops of the 1st ("Insurgent") Division, occupying the horseshoe position West of the river Cam. The Government aircraft, however, in respect of the march of the 11th Infantry Brigade, lay under special disabilities. No flying was permitted outside the boundary of the manœuvre area, marked on the East and South by the line Halstead–Witham–Chelmsford.

Colchester—the starting point of the 11th Infantry Brigade and part of their circuitous route to Buntingford, lay outside the authorized limits of aerial reconnaissance. For various reasons, therefore, the approach march of the 11th Infantry Brigade seems to have escaped the attention of reconnaissance aircraft.

Yours faithfully,

A. G. ARMSTRONG,
Lieutenant-Colonel.

NAVY NOTES

GREAT BRITAIN

Admiralty Inspection.

The Board of Admiralty carried out an official inspection of the Naval and Marine establishments and H.M. Dockyard at Portsmouth on 25th and 26th November. The inspection began with an assembly of 150 officers and 3,000 petty officers and men on the parade ground of the R.N. Barracks, which was stated to be the largest since the War. Fourteen hundred of the men were new entries, some of whom had joined only on the previous day.

After the parade the members of the Board divided for visits to the various establishments.

Naval Meteorological Branch.

The Naval Meteorological Branch has been reinstituted at the Admiralty, where it was originally formed during the War. Since 1920 it had been merged with the Meteorological Office, under the superintendence of the Air Ministry.

Captain L. G. Garbett, R.N., formerly Superintendent of the Naval Division of the Meteorological Office, has been appointed Chief Superintendent of Naval Meteorology, under the Hydrographer of the Navy, with three naval assistants and a civil staff.

Flag List Changes.

Vice-Admiral Sir Frank F. Rose, K.C.B., D.S.O., was placed on the retired list, medically unfit, to date 4th November, 1937. In consequence :—

Rear-Admiral Clinton F. S. Danby, C.B., was promoted to Vice-Admiral from the same date, and placed on the retired list, to date 5th November. Vice-Admiral Danby was reappointed as Admiral-Superintendent, H.M. Dockyard, Chatham, on promotion and retirement from the active list.

Rear-Admiral Lewis G. E. Crabbe, C.B., C.I.E., D.S.O., was promoted to Vice-Admiral, to date 5th November.

The first list of promotions to Flag rank under the new system whereby they are to be made half-yearly was announced on 11th January, from which date the following officers were promoted to Rear-Admiral :—Captains Bruce A. Fraser, O.B.E., A.D.C., Lancelot E. Holland, A.D.C., Sir Lionel A. D. Sturdee, Bart., A.D.C., Alan R. Dewar, A.D.C., Henry D. Pridham-Wippell, C.V.O., A.D.C. (Commodore, Second Class), Henry R. Moore, C.V.O., D.S.O., A.D.C. (Commodore, First Class), Ronald W. Oldham, O.B.E., A.D.C., Richard B. Davies, V.C., D.S.O., A.F.C., A.D.C. (Commodore, Second Class).

The following were placed on the Retired List to date 12th January, 1938 :—Rear-Admirals Sir Lionel Sturdee, Alan R. Dewar and Ronald W. Oldham.

Rear-Admiral Lancelot E. Holland, Assistant Chief of the Naval Staff, and Rear-Admiral Henry R. Moore, Chief of Staff in the Home Fleet, were reappointed in those appointments on promotion.

Vice-Admiral Sir Geoffrey Blake, K.C.B., D.S.O., was placed on the Retired List at his own request, to date 15th January, and in consequence Rear-Admiral Charles G. Ramsey, C.B., was promoted to Vice-Admiral from the same date.

Admiral of the Fleet Sir Frederick L. Field, G.C.B., K.C.M.G., was placed on the Retired List, to date 21st January, and the following promotions, reappointments and retirements were approved :—

Admiral the Earl of Cork and Orrery, G.C.B., G.C.V.O., to be Admiral of the Fleet, to date 21st January, and reappointed Commander-in-Chief, Portsmouth, on promotion.

Vice-Admiral Sir William M. James, K.C.B., to be Admiral, to date 21st January. Rear-Admiral Robert C. Davenport, C.B., to be Vice-Admiral, to date 21st January, and placed on the Retired List, 22nd January. Rear-Admiral Thomas H. Binney, C.B., D.S.O., to be Vice-Admiral, 22nd January, and reappointed Vice-Admiral, First Battle Squadron, on promotion.

The Admiralty announced on 6th January that Vice-Admiral Arthur E. F. Bedford, C.B., C.S.I., had been placed on the Retired List, to date 11th December, 1937, on completion of his appointment as Flag Officer Commanding Royal Indian Navy. As Vice-Admiral Bedford was supernumerary to the Flag List no vacancy occurred in consequence of his retirement.

Flag Appointments.

China Station.—On account of the temporary ill-health of Admiral Sir Charles Little, K.C.B., the change of Commander-in-Chief, China, was expedited. Vice-Admiral Sir Percy Noble, K.C.B., C.V.O., left England early in January for Hong Kong, where he was to assume command of the Station in February instead of in April as originally intended.

On the indisposition of Admiral Little, Vice-Admiral L. G. E. Crabbe, C.B., C.I.E., D.S.O., Senior Naval Officer in the Yangtze, assumed command of the China Station temporarily, and went to Hong Kong on 20th December, last, by air from Hankow. Rear-Admiral R. Vesey Holt, D.S.O., M.V.O., who had already arrived to take over the Yangtze Command and had been acting temporarily as Chief of Staff to Vice-Admiral Crabbe, succeeded the latter and hoisted his flag in H.M.S. " Bee."

(*Note.*—For naval events in connection with the Sino-Japanese War, see " The International Situation," p. 172.)

Mediterranean Station.—On 29th December, the Admiralty announced that the appointment of Vice-Admiral Andrew B. Cunningham, C.B., D.S.O., as Vice-Admiral Commanding, Battle-Cruiser Squadron, and Second-in-Command, Mediterranean, is no longer to be regarded as temporary. Vice-Admiral Cunningham was appointed to this command on 3rd July, 1937, in succession to Vice-Admiral Sir Geoffrey Blake, K.C.B., D.S.O. (sick), and assumed command in H.M.S. " Hood " on 15th July.

Rear-Admiral John C. Tovey, C.B., D.S.O., is to be Rear-Admiral (D) Commanding Destroyer Flotillas, Mediterranean Fleet, in succession to Vice-Admiral James F. Somerville, C.B., D.S.O., to date March, 1938, and to assume command in April.

Personnel.

Boyle Somerville Memorial.—Relatives and friends of the late Vice-Admiral Boyle Somerville, C.M.G., and officers of the Royal Navy have contributed towards

the institution of a prize in his memory which will be known as the Boyle Somerville Memorial Prize, and will have as its object the encouragement of research work in connection with the science of meterology. It will be awarded on the material received at the Admiralty in each calendar year by a Committee consisting of the Hydrographer, the Director of the Naval Air Division and the Chief Superintendent of the Naval Meterological Branch. The first award will be decided in January, 1939.

CROCKER MEMORIAL FUND.—A prize fund has been established by subscription from certain serving and retired Engineer officers and members of the Royal Corps of Naval Constructors, pupils of the late Mr. John Crocker during their period of training at the R.N. Engineering College, Keyham, as a memorial to him. The interest will be employed to provide a prize to be awarded annually to the Sub-lieutenant undergoing training at the College who produces the best set of finished drawings, with rough sketches, of an approved machinery part. The first award is to be made as the result of drawings completed by Christmas, 1937.

PRIZE AWARDS.—The Commander Egerton Memorial Prize for 1937 has been awarded to Lieutenant R. E. Washbourn, R.N., H.M.S. " Excellent." The Newman Memorial Prize for 1936–37 has been awarded to Lieutenant (E) R. L. Edmonds, R.N., H.M.S. " Southampton."

UNIFORM CHANGES.—With the approval of the King, an amendment has been made in the uniform regulations for officers in so far as they relate to the wearing of ball dress. After No. 2 uniform, " ball dress," provision is now made for No. 2A, " ball dress without epaulettes," to consist of the same articles as No. 2 except that epaulettes are not to be worn. No. 2A dress is to be ordered for official or public balls, dinners, and evening receptions of a less formal nature than those at which No. 2 dress would be worn.

SUPPLEMENTARY LIST SPECIALISTS.—Officers of the Royal Naval Reserve who transfer to the Supplementary List of the Royal Navy under the scheme announced in the issue of the JOURNAL for May, 1937 (page 420) are now eligible to volunteer to specialize in physical and recreational training at any time after confirmation in, or promotion to, the rank of Lieutenant. Other branches in which these officers are allowed to specialize are submarines, the Fleet Air Arm, anti-submarine and surveying.

PROMOTION TO LIEUTENANT (E).—Their Lordships have decided that calculation of the seniority of Lieutenants (E) is to follow the lines adopted in July last for executive officers. The following scale will apply to all officers who completed their training as Midshipmen (E) from December, 1935, inclusive, and to Acting Sub-lieutenants (E)—not Cadet entry—of seniority of July, 1936 :—

TIME TO BE SERVED AS SUB-LIEUTENANT (E).—For ten promotion marks gained, 16 months from date of seniority as Sub-lieutenant (E) ; nine marks, 17 months ; eight marks, 18 months ; seven marks, 19 months ; six marks, 20 months ; five marks, 22 months ; four marks, 23 months ; three marks, 24 months ; two marks, 25 months ; one mark, 26 months ; and no marks, 28 months.

AWARDS FOR GALLANTRY.—The King has approved the undermentioned awards of the Medal of the Military Division of the British Empire for gallant and distinguished services rendered when H.M.S. " Hunter " was mined off Almeria on 13th May, 1937 :—

FOR GALLANTRY.—Lieutenant Patrick N. Humphreys, R.N., and James Smail, Petty Officer.

FOR MERITORIOUS SERVICE.—Peter T. C. Perring, Stoker Petty Officer; Sidney Bevington, Acting Leading Seaman; James F. Collings, Ernest Thomas and Herbert Abrahams, Able Seamen.

RECRUITING PROGRESS.—Speaking at the annual reunion of the R.N.V.R. Auxiliary Patrol Club on 12th November, Admiral Sir Martin Dunbar-Nasmith, V.C., Second Sea Lord, said that the number of recruits enlisting in 1937 for the Royal Navy was four times as many as in 1932. The success in recruiting he added, is due to the general appreciation growing throughout the country of the fact that the British Navy is the main factor that stands between law and order and chaos. There were roughly 510,000 tons of warship construction on the stocks.

R.N. FILM CORPORATION.—The Duke of Kent has consented to become Patron of an association to be called the Royal Naval Film Corporation, which is being formed with the object of supplying up-to-date cinema entertainment for officers and men serving in seagoing ships of the Fleet, including the smaller vessels. The Board of Admiralty will be governors of the corporation.

ROYAL INSPECTION.—The Duke of Gloucester, who in May last was appointed an Honorary Captain in the R.N. Volunteer Reserve paid his first visit to H.M.S. "President" off Victoria Embankment on 14th December, and presented prizes. He read a telegram from the King to the ship's company expressing thanks for a loyal message.

LONGER HAMMOCKS.—Longer hammocks are to be provided for tall seamen, consequent on a request at the 1936 Review of Service Conditions. Demands are to be restricted to the quantities required for use by men of exceptional height who cannot be satisfactorily accommodated in hammocks of the standard pattern.

LANDING OF PROVISIONS.—The total value at current issuing prices of the quantities of provisions permitted to be landed weekly by any man under Article 1822 of the King's Regulations is to be limited to four shillings. Maximum quantities that may be taken up include 4 lb. of fresh meat, 2 lb. of flour, 3 lb. of potatoes, and ½ lb. of butter.

TRAINING FOR COMMISSIONS.—H.M.S. "Ramillies" has been selected as the ship for the special training of lower deck candidates for commissioned rank under the new scheme whereby these candidates are to be intensively trained for eight or nine months to bring them up to the educational and professional standard required before final selection. The complement of the "Ramillies" has been increased by a Lieutenant-Commander and an Instructor Officer.

ORGANIZATION AND DISTRIBUTION.

MEDITERRANEAN FLAGSHIP.—H.M.S. "Warspite," after being docked for further repairs to remedy slight leaks which had developed in two unimportant compartments aft, was completed in December, and left Portsmouth on 5th January to become flagship in the Mediterranean in succession to the "Barham."

The First Lord, in answer to a Parliamentary question stated that the "Warspite," laid down in October, 1912, and completed in March, 1915, cost £2,524,148. Repair bills at various dates since her completion accounted for £966,000. Her reconstruction has cost £2,362,000.

EAST INDIES FLAGSHIP.—H.M.S. "Norfolk," which was recommissioned at Devonport on 26th October, left for the East Indies on 10th November, and arrived at Trincomalee on 4th December. The flag of Vice-Admiral the Hon. Sir Alexander

Ramsay, K.C.B., K.C.V.O., D.S.O., was transferred to her from the "Emerald" at Madras on 17th December.

3RD CRUISER SQUADRON.—The flag of Rear-Admiral L. V. Wells, D.S.O., Commanding 3rd Cruiser Squadron, was transferred from the "Despatch" to the "Delhi" on 22nd November at Malta. The "Despatch" left for Portsmouth on the 24th to reduce to reserve. The "Arethusa" recommissioned at Chatham on 2nd November, and left Portsmouth on the 16th for Malta, where the flag of Rear-Admiral Wells was to be transferred to her in January.

HOME FLEET FLOTILLAS.—The new cruiser "Aurora" was commissioned at Portsmouth on 9th November for service as the ship of Commodore H. D. Pridham-Wippell, C.V.O., A.D.C., Commanding Home Fleet Destroyer Flotillas, in succession to the "Cairo," which was placed in reserve at Devonport.

RETURN OF THE "DANAE."—The "Danae," Captain L. E. H. Maund, which had served in China since September, 1936, during the absence of cruisers of the "Kent" class for large repairs, returned to Portsmouth on 9th December. She was ordered to be taken in hand for a refit on 24th January in preparation for passing into reserve.

DEPOT-SHIPS REDUCED.—The repair ship "Resource" was reduced to reserve under the administration of the Vice-Admiral, Malta, on 23rd November. The "Resource" acted as accommodation ship for submarine crews while the "Cyclops" was detached as depot-ship for the flying-boats at Arzeu. The destroyer depot-ship "Woolwich" is to reduce to reserve at Malta about the end of February and to be taken in hand for refit.

BOYS' TRAINING SHIPS.—Owing to the large number of boys coming forward from the shore training establishments it was decided in October to allocate three more ships from the Reserve Fleet as overflow vessels for boys who could not be accommodated in the two battleships of the Home Fleet already being utilized for training purposes. The "Calcutta" was ordered to be employed at Chatham, the "Dunedin" at Portsmouth, and the aircraft-carrier "Hermes" at Devonport until a cruiser was available. From 4th November, the "Dunedin" has also been employed as a torpedo-bomber target at Portsmouth, as an independent command, remaining in the Reserve Fleet.

MOTOR TORPEDO BOATS.—Rear-Admiral T. H. Binney, C.B., D.S.O., Rear-Admiral in the 1st Battle Squadron, Mediterranean, has been made responsible for the operations and training of the new 1st Motor Torpedo-Boat Flotilla, consisting of six boats, which arrived on the station in July. The accounts of the "Vulcan," parent ship, and the Flotilla were transferred from the "Vernon" to the "St. Angelo" from 23rd June, 1937.

RESERVE DESTROYERS, CHINA.—In accordance with arrangements for reserve ships on foreign stations which have been brought into operation gradually since they were approved in 1936, the destroyers "Tenedos" and "Thanet" are proceeding to join the reserve at Singapore, and the destroyer "Scout" at Hong Kong.

MATERIAL.

1937 PROGRAMME.—The keel of the aircraft-carrier "Indomitable" was laid at Barrow by Vickers-Armstrongs, Ltd., on 10th November, 1937.

Orders for the four "Fiji" class cruisers of this programme to be built by contract were placed in December as follows:—

H.M.S. "Mauritius," Swan, Hunter and Wigham Richardson, Wallsend-on-Tyne, with machinery by the Wallsend Slipway and Engineering Company.

H.M.S. " Fiji," John Brown and Company, Clydebank.

H.M.S. " Kenya," Alexander Stephen and Sons, Govan, Glasgow.

H.M.S. " Nigeria," Vickers-Armstrongs, High Walker, Newcastle-on-Tyne, with machinery by the Parsons Marine Steam Turbine Company, Wallsend-on-Tyne.

The fifth cruiser of this class is H.M.S. " Trinidad," to be built at Devonport Dockyard, with machinery by Hawthorn, Leslie and Co., Hebburn-on-Tyne.

The two " Dido " class cruisers of the programme have been laid down as follows :—

H.M.S. " Bonaventure," by the Scotts' Shipbuilding and Engineering Company, 20th August, 1937.

H.M.S. " Hermione," by Alexander Stephen and Sons, Govan, 6th October, 1937.

The eight " Kelly " class destroyers, ordered in March, 1937, have been laid down as follows :—

" Kelly," by Hawthorn, Leslie and Co., 26th August.
" Kashmir," by John Brown and Co., 11th October.
" Kandahar," by Denny and Bros., January, 1938.
" Kelvin," by Fairfield Shipbuilding Co., 5th October.
" Khartoum," by Swan, Hunter and Wigham Richardson, 27th October.
" Kimberley," by Thornycroft and Co., January, 1938.
" Kingston," by J. Samuel White and Co., 6th October.
" Kipling," by Yarrow and Co., 20th October.

Orders for the escort vessels " Black Swan " and " Flamingo " were placed on 3rd January, 1938, with Messrs. Yarrow and Co., Ltd., Scotstoun, Glasgow.

The keel of the minesweeper " Bramble " was laid at Devonport Dockyard on 22nd November, and that of her sister-ship the " Britomart " was due to be laid in January, 1938.

The seven submarines of the 1937 programme (" Triton " class) are in hand as follows :—

" Taku," Cammell Laird, ordered July, laid down 18th November.
" Tarpon," Scotts' Company, ordered July, laid down 5th October.
" Thistle," Vickers-Armstrongs, ordered July, laid down 7th December.
" Tigris," to be built at Chatham Dockyard.
" Triad " and " Truant," Vickers-Armstrongs, ordered 8th December.
" Tuna," Scotts' Company, ordered 8th December.

The river gunboats " Dragonfly " and " Grasshopper," ordered in August, were laid down by Messrs. Thornycroft, Woolston, in November and December respectively.

1936 Programme.—The five " Dido " class cruisers of this programme have been laid down as follows :—

" Dido," by Cammell Laird, Birkenhead, 20th October.
" Euryalus," at Chatham Dockyard (machinery by Hawthorn, Leslie and Co.), 21st October.
" Naiad," by Hawthorn, Leslie and Co., Hebburn-on-Tyne, 26th August.
" Phœbe," by Fairfield Company, Govan, 2nd September.
" Sirius," at Portsmouth Dockyard.

The " Belfast " and " Edinburgh " (improved " Southampton " type), laid down in December, 1936, by Harland and Wolff, Belfast, and Swan Hunter, Wallsend, are due to be launched in March and February, 1938, respectively.

Destroyers of the Second Tribal Flotilla have been launched as follows :—

" Ashanti," Dumbarton, 5th November.
" Bedouin," Dumbarton, 21st December.
" Eskimo " and " Mashona," Wallsend, 3rd September.
" Matabele," Greenock, 6th October.
" Punjabi," Greenock, 18th December.
" Sikh," Govan, 17th December.
" Somali," Wallsend, 24th August.
" Tartar," Wallsend, 21st October.

Destroyers of the " Javelin " class, contracts for which were placed in March, 1937, have been laid down as follows :—

" Jervis," Hebburn, 26th August.
" Jackal," Clydebank, 24th September.
" Jaguar," Dumbarton, November.
" Jamaica," Govan, 5th October.
" Janus," Wallsend, 29th September.
" Javelin," Woolston, October.
" Jersey," Cowes, 20th September.
" Jupiter," Scotstoun, 28th September.

The submarine " Triumph " (" Triton " class) is due to be launched by Vickers-Armstrongs at Barrow on 16th February ; and the small submarines " Unity " and " Ursula " by the same firm on the same date.

The escort vessels " Auckland " and " Egret," ordered in March, 1937, from Denny and Brothers and J. Samuel White respectively, were laid down on 17th June and 21st July. The " Pelican," for surveying duties, was laid down by Messrs. Thornycroft on 7th September.

The minesweeper " Seagull " was launched at Devonport Dockyard on 28th October ; and the " Jason," for surveying duties, by the Ailsa Shipbuilding Company Troon, on 6th October.

The river gunboat " Scorpion " was launched by Messrs. White at Cowes on 20th December.

1935 Programme.—H.M.S. " Gloucester," the last of the three cruisers of this programme, was launched at Devonport Dockyard by H.R.H. the Duchess of Gloucester on 19th October.

H.M.S. " Nubian," the last of the seven destroyers of the First Tribal Flotilla, was launched at Woolston by Messrs. Thornycroft on 21st December.

H.M.S. " Impulsive," the last of the nine destroyers of the " Intrepid " type, 1935 programme, was completed in January.

The submarine " Sterlet," the last of the twelve of the " Swordfish " type built under the programmes of 1929–35, was commissioned at Chatham with a special complement for trials and subsequent service in the 5th Flotilla on 18th December.

The minelaying submarine " Cachalot " was launched by the Scotts' Company, Greenock, on 2nd December.

The minesweepers " Hebe," Devonport Dockyard ; " Hazard," William Gray, Hartlepool ; and " Sharpshooter," Devonport Dockyard, were completed in

October, November and December respectively. This leaves only the " Gleaner," for surveying duties, to be completed of the minesweepers of this programme.

The coastal minelayer " Plover," built by Denny and Brothers, Dumbarton, was commissioned at Portsmouth on 27th September for service as a tender to the " Vernon."

1934 PROGRAMME.—The cruiser " Birmingham " was commissioned on 16th November at Devonport Dockyard with a crew from Portsmouth and proceeded there on the 19th to prepare for service in China. This completes all the vessels of the 1934 construction programme except the aircraft-carrier " Ark Royal."

MISCELLANEOUS.

NAVY WEEK, 1938.—The annual Navy Week at Portsmouth, Devonport and Chatham is to be held next summer from Saturday, 30th July, to Saturday, 6th August, both dates inclusive, but excepting Sunday, 31st July.

HEALTH OF THE FLEET.—The Report on the Health of the Navy for 1935, published in December, 1937, showed a decrease in the incidence of disease and injury compared with 1934 and with the five years' average. The invaliding and death ratios were higher than in 1934, but the average number of men sick daily was the lowest on record, a ratio of 18.17 per 1,000, a decrease of .44 per thousand compared with 1934 and of 1.24 in relation to the five years' average.

TRAFALGAR SQUARE MEMORIALS.—Replying to a Parliamentary question on 24th November, Sir Philip Sassoon said that he was considering the suggestion that the memorials which Parliament resolved should be set up to Earl Jellicoe and Earl Beatty should appropriately take the form of ornamental fountains in Trafalgar Square. No site so suitable for naval heroes could be found, and he was accordingly exploring the possibility of a scheme which, while adequately fulfilling the intention of providing memorials to those two great sailors, should at the same time afford an embellishment of Trafalgar Square itself.

THE " NAVY LIST."—The half-yearly edition of the " Navy List," which includes the lists of Retired Officers, will in future be issued in February and August, and not in January and July, beginning with the edition for February, 1938.

DOMINION NAVIES

TRANSFERS SUSPENDED.—Their Lordships have decided that, in view of the present need for trained men in the Royal Navy, applications by ratings for permanent transfer to Dominion Navies are to be suspended for the present. Such applications are only to be transmitted if the commanding officer is satisfied that they are based on compassionate grounds of an exceptional character. This order does not affect existing arrangements for the loan of ratings for service in Dominion Navies.

ROYAL AUSTRALIAN NAVY

FIRST NAVAL MEMBER.—Vice-Admiral Sir Ragnar M. Colvin, K.B.E., C.B., arrived at Melbourne on 1st November and took up the post of First Naval Member of the Commonwealth Naval Board, in succession to the late Admiral Sir Francis Hyde, K.C.B., C.V.O., C.B.E.

REAR-ADMIRAL COMMANDING.—Rear-Admiral Wilfred N. Custance is to be lent to the Royal Australian Navy, to date 26th February, 1938, and has been appointed Rear-Admiral Commanding H.M. Australian Squadron, in succession to Rear-

Admiral Richard H. O. Lane-Poole, C.B., O.B.E. He will arrive at Sydney on 21st April.

CRUISES.—The Australian Squadron, consisting of the "Canberra," "Australia," "Swan," "Stuart," "Waterhen" and "Vendetta" left Sydney on 27th October for a cruise to Melbourne, Port Phillip and Jervis Bay, returning on 2nd December.

ROYAL CANADIAN NAVY

TRAINING SCHOONER.—H.M.C.S. "Venture," a training schooner, was commissioned at Halifax on 25th October as a tender to H.M.C.S. "Stadacona," depot-ship.

NEW ZEALAND DIVISION, ROYAL NAVY

EXCHANGES IN ABEYANCE.—The New Zealand Naval Board have decided that the fourth draft of interchange ratings will not be sent from New Zealand this financial year, and to this extent the interchange scheme will be held in abeyance for the time being. Arrangements are being made for the repatriation of the 1935 interchange drafts (No. 1).

AUSTRALIAN CRUISE.—The "Achilles" and "Leander," the former with Rear-Admiral the Hon. E. R. Drummond, C.B., M.V.O., Commanding New Zealand Station, were due to leave Auckland on 20th January to spend a month in Australian waters. Their programme included visits to Sydney, Melbourne, Jervis Bay and Hobart.

ROYAL INDIAN NAVY

FLAG OFFICER COMMANDING.—On 20th November Vice-Admiral Arthur E. F. Bedford, C.B., C.S.I., relinquished the post of Flag Officer Commanding the Royal Indian Navy and Naval Adviser to the Commander-in-Chief in India, and Defence Member of the Executive Council, which he had held for three years. He was succeeded by Rear-Admiral Herbert Fitzherbert, C.M.G.

SINGAPORE, R.N.V.R.

Captain Victor E. Ward, R.N., who retired in 1933, has been appointed Commanding Officer of the Royal Naval Volunteer Reserve Division at Singapore, in succession to Commander L. A. W. Johnson, M.V.O., R.N., who retires after four years in this command.

FOREIGN NAVIES

FRANCE

HIGH COMMAND.—The French Services, and especially the Navy, must suffer in efficiency from the repeated changes in the organization of the High Command. The latest, brought about by a decree signed by the President on the 21st January, places all three Ministries of Defence under the control of M. Daladier, while General Gamelin is made Chief of General Staff of National Defence. This means, in effect, that naval strategy will be directed as part of military strategy—a system which proved singularly unsatisfactory as regards the former when employed by Germany in the Great War.

It is evident, however, that the object in view by the new French Government is to do everything possible to increase the readiness and efficiency of the fighting Services. The existing situation seems to have aroused some alarm. Mention has

been made on more than one occasion in these Notes of the delays in new construction caused by socialist legislation and strikes.

NEW CONSTRUCTION.—The 1938 Programme makes provision for two aircraft carriers, an 8,000 ton cruiser, three destroyers of 1,172 tons and three of 1,000 tons (classified as torpedo boats), and four 800 ton submarines.

GERMANY

AIRCRAFT CARRIERS.—Two aircraft carriers are under construction. They are ships with a standard displacement of 19,250 tons. It is reported that they are to be well protected even at the expense of a reduction in the number of aeroplanes to be carried, and that they are to be armed with fourteen 5.9-in. general-purpose guns.

NEW CRUISERS.—The 10,000 ton cruisers "Blücher" and "Admiral Hipper," laid down in 1935 at Kiel and Hamburg respectively, are expected to be in commission by the end of the present year. A third ship of the class, known as cruiser "I," laid down at the Germania Yard in 1936, is due to be launched shortly.

Cruisers "K" and "L" were laid down by Blom and Voss and the Deutschewerke respectively last year. They will displace 10,000 tons, but their armament will be 5.9-in. guns instead of the 8-in. of the three earlier vessels. Two 7,000 ton cruisers, also to be armed with 5.9-in. guns, are due to be laid down early this year.

NEW SUBMARINE ENGINE.—It is reported that some of the latest submarines are being equipped with a new type of engine. This takes the form of a hydrogen and oxygen motor whereby the system of having Diesel engines for use on the surface and for charging the batteries required to drive electric motors used when submerged is dispensed with, with a consequent reduction in weight and increase in efficiency, radius of action, simplicity in upkeep, training, etc.

ITALY

NEW CONSTRUCTION.—A new building programme was announced by Signor Mussolini early this year. This makes provision for two more 35,000 ton battleships, twelve *esploratori*, and an unspecified number of submarines.

The battleships are to be called the "Roma" and "Impero" and will be laid down as soon as possible at Trieste and Genoa respectively. When they are completed Italy will have four ships of the latest type and four reconstructed battleships.

The *esploratori* are really small high-speed cruisers.

JAPAN

NEW BATTLESHIPS.—Reports continue to appear to the effect that Japan intends to build very large battleships of 40,000 to 50,000 tons, and that they are to be armed with guns even in excess of 16-in. As stated in last quarter's Notes, this was emphatically denied by the Minister of Marine in the early part of last year. It is, of course, possible that there has been a change of policy, but the depth of water in Japanese harbours and the width of entrances to docks impose limitations on the size of new ships; moreover it should be obvious to the Japanese that, if they embark on a race of this character, they are bound to lose it in the end as, apart from any re-actions elsewhere, the United States would certainly not accept a position of inferiority in this respect.

CRUISERS.—It is understood that a certain number of cruisers have been provided for in the third Replacement Programme, but at the moment Japan has only two building—the "Tone" and "Tikuma." These are ships of 6,500 tons armed with fifteen 6.1-in. and eight 5-in. A.A. guns. They are due for completion in 1938 and 1939 respectively.

DESTROYERS.—The latest type of destroyer is remarkable for the very heavy armament carried on an ostensibly small tonnage. The "Oshio" class have a reputed displacement of 1,500 tons and mount six 5-in. guns and eight 21-in. torpedo tubes. They draw only 9 feet, and their designed full speed is 34 knots.

NETHERLANDS

NEW CONSTRUCTION.—The 1938 Estimates make provision for a cruiser to replace the "Sumatra." She will be slightly larger than her predecessor and will carry eight 5.9-in. guns in double turrets and six 1.5-in. A.A. machine guns. The Programme also includes two destroyers, three submarines, some motor torpedo boats and twelve large seaplanes.

DEFENSIVE ARMAMENTS.—An interesting item in this year's Estimates is a sum of two million florins for the armament of merchant ships for defensive purposes. A reserve of guns is also to be built up, which could be used either for this purpose or for coast defence.

SOVIET UNION

HIGH COMMAND.—At the end of 1937 the High Command of the Soviet Navy was divorced from that of the Army and Air Force. A Commissariat of the Naval Fighting Forces was created with Smirnoff as its chief and having the title of Naval Commissar, and Mekhlis as his Deputy. A General Staff of the Red navy has also been created and Admiral Galler, a former Czarist naval officer, has been appointed Chief of Staff.

NEW CONSTRUCTION.—There are some grounds for believing that Russia has ordered a battleship from the United States, or else is acquiring from that country manufactured material for such a vessel to be assembled at home.

It is reported that two 8,500 ton cruisers laid down in 1913-14 but still on the stocks, are now to be completed and that a third half-built cruiser is to be finished in the form of a 9,000 ton aircraft carrier.

Two vessels of a flotilla leader type, the "Leningrad" and "Minsk" have been completed at Leningrad. They displace 2,900 tons, are armed with five 5.1-in. and four 37 mm. A.A. guns, and two triple 21-in. torpedo tubes. The designed full speed was 35 knots, but the "Leningrad" is credited with having made 36.3 knots on her trials. Six more ships of the class are alleged to be under construction, one at Leghorn and the remainder in Russia.

UNITED STATES

NEW CONSTRUCTION.—Provision has been made in the 1938-39 fiscal year for the construction of two battleships, two light cruisers, eight destroyers and six submarines. The President, in a letter to the Chairman of the Appropriations Committee of the House of Representatives at the end of last December, intimated that, in view of world events, he might find it necessary to send supplementary estimates to Congress to provide for naval construction in excess of the foregoing.

NEW BATTLESHIPS.—It is probable that the nine 16-in. guns to be mounted in the new battleships will be in three triple turrets, two forward and one aft. It is also believed that the ships will have a secondary armament of sixteen 5-in. guns in twin turrets. As mentioned in these notes a year ago, their speed will be relatively low, probably only 26 or 27 knots, as compared with 30 knots or more of contemporary designs in other navies.

NEW CRUISERS.—The last 8-in. cruiser, the "Wichita," was launched from Philadelphia Navy Yard on the 16th November. She is due for completion during 1938 and will make up the United States' quota of eighteen of these ships.

NAVAL AIR SERVICE.—According to the Chief of the Bureau of Aeronautics the United States Navy will have 1,870 aircraft by the 1st July next and 2,500 by 1941.

FLAG CHANGES.—Amongst the changes in High Commands due to take place early this year is the relief of Admiral Arthur J. Hepburn by Admiral Claud B. Bloch as Commander-in-Chief of the United States Fleet. The latter is succeeded by Vice-Admiral Edward C. Kalbfuss as Commander, Battle Force: he assumes the rank of Admiral on taking up that appointment. He in turn is relieved as Commander, Battleships, Battle Force, by Rear-Admiral John W. Greenslade, who becomes a Vice-Admiral. Rear-Admiral Earnest J. King becomes Commander, Aircraft, Battle Force, and is relieved by Rear-Admiral Charles A. Blakely as Commander, Aircraft, Scouting Force. Both become Vice-Admirals.

FLEET MANŒUVRES.—The naval manœuvres, which are due to be held in March, are to take place in the California–Hawaii–Aleutian Islands triangle; the operations will be mostly on the Hawaii–Californian axis instead of to the West of the Hawaiian Islands, as they did last year.

ARMY NOTES

His Majesty the King.

Colonel-in-Chief.—His Majesty the King has been pleased to assume the appointment of Colonel-in-Chief of the following units of the Indian Army: 16th Light Cavalry, 1st Punjab Regiment and 13th Frontier Force Rifles.

To be Aides-de-Camp to the King.—Colonel (temporary Brigadier) W. T. Brooks, M.C. and Colonel (temporary Brigadier) J. H. T. Priestman, C.B.E., D.S.O., M.C.

Colonels Commandant.—The King has been pleased to approve of the following appointments as representative Colonels Commandant for 1938.:—

Major-General H. D. de Pree, C.B., C.M.G., D.S.O., Reserve of Officers, Colonel Commandant, Royal Artillery.

Major-General H. L. Pritchard, C.B., C.M.G., D.S.O., Reserve of Officers, Colonel Commandant, Royal Engineers.

Colonel (temporary Brigadier) R. H. Willan, D.S.O., M.C., A.D.C., Colonel Commandant, Royal Corps of Signals.

Colonel (honorary Major-General) Sir Ernest Swinton, K.B.E., C.B., D.S.O., Colonel Commandant, Royal Tank Corps.

Major-General Sir Evan Gibb, K.B.E., C.B., C.M.G., D.S.O., Reserve of Officers, Colonel Commandant, Royal Army Service Corps.

Major-General D. J. Collins, C.B., C.M.G., M.D., Colonel Commandant, Royal Army Medical Corps.

Major-General B. A. Hill, C.B., D.S.O., Colonel Commandant, Royal Army Ordnance Corps.

To be Colonel Commandant, Royal Artillery, Lieutenant-General Sir Henry Karslake, K.C.B., K.C.S.I., C.M.G., D.S.O.

To be Colonel, 5th Royal Inniskilling Dragoon Guards; Colonel (temporary Brigadier) R. Evans, M.C., A.D.C.

To be Colonel Commandant, 1st Battalion, The King's Royal Rifle Corps; Major-General Sir Hereward Wake, Bt., C.B., C.M.G., D.S.O.

To be Colonel, The Argyll and Sutherland Highlanders (Princess Louise's); Major-General G. Thorpe, C.B., C.M.G., D.S.O.

To be Honorary Surgeon to the King: Major-General G. G. Tabuteau, D.S.O.

To be Constable of the Tower of London: Field-Marshal Sir Claud Jacob, G.C.B., G.C.S.I., K.C.M.G., Colonel, The Worcestershire Regiment and the 2nd Battalion 10th Baluch Regiment, Indian Army; from 19th February, 1938.

HOME

The War Office announces the following appointments:—

Army Council.

Major-General (local Lieutenant-General) the Viscount Gort, V.C., C.B., C.B.E., D.S.O., M.V.O., M.C., to be Chief of the Imperial General Staff and to be promoted to the rank of General, in succession to Field-Marshal Sir Cyril Deverell, G.C.B.,

K.B.E., who has resigned that appointment in order to facilitate the promotion of younger officers.

General the Viscount Gort is 51 years of age. He was born on 10th July, 1886. He joined the Grenadier Guards as 2nd Lieutenant on 16th August, 1905. At the outbreak of War he was serving as Aide-de-Camp to the General Officer Commanding London District. He proceeded to France with the first contingent. During the War he served both on the Staff and at regimental duty, being wounded three times, earning the Victoria Cross, the Distinguished Service Order with two bars and the Military Cross, and was mentioned in despatches eight times. At the end of the War, he had attained the rank of Captain (Brevet-Major), and had held the acting rank of Lieutenant-Colonel for a year and a half.

He attended the first course to be held at the Staff College after the War, subsequently returning there as an Instructor from January 1921 to April, 1923. After commanding his Regiment and serving as an Instructor at the Senior Officers School he became G.S.O.1., Shanghai Defence Force, in January, 1927. After further Staff employment at Home he sailed for India in November, 1932, to take up the appointment of Director of Military Training, India, with the rank of Brigadier. He held this appointment until March, 1936, when he became Commandant of the Staff College, Camberley, having been promoted Major-General on 25th November, 1935. On 24th September, 1937, he was appointed Military Secretary to the Secretary of State for War with the local rank of Lieutenant-General.

Major-General C. G. Liddell, C.B., C.M.G., C.B.E., D.S.O., to be Adjutant-General to the Forces, in succession to General Sir Harry Knox, K.C.B., D.S.O., who has also resigned in order to facilitate the promotion of younger officers.

Major-General Clive Gerard Liddell was born on 1st May, 1883. He joined the Leicestershire Regiment on 22nd October, 1902. At the outbreak of War he was serving as Staff Captain, Northern Command, York, and in November, 1914, proceeded to France as Deputy Assistant Adjutant and Quartermaster-General. He served in France until the end of 1916, when he was recalled for special employment at the War Office. During the War he was mentioned six times in despatches and earned the C.M.G., C.B.E. and D.S.O.

He served as an Instructor at the Staff College from March, 1919, until April, 1922, and then as G.S.O.1 at the War Office. In June, 1931, he took over command of the 8th Infantry Brigade at Plymouth which he gave up in April, 1934, having been promoted Major-General the previous December. On 1st January, 1935, he assumed command of the 47th (2nd London) Division, Territorial Army and in November of the same year he was transferred to the command of the 4th Division at Colchester, which appointment he holds at the present time. Major-General Liddell is a graduate of the Imperial Defence College. From 1923 to 1925 he held the post of Deputy Administrator, British Empire Exhibition, Wembley.

Engineer Vice-Admiral Sir Harold A. Brown, K.C.B., Director-General of Munitions Production, to take over the duties of the Master-General of the Ordnance from Lieutenant-General Sir Hugh Elles, K.C.B., K.C.M.G., K.C.V.O., D.S.O., who is relinquishing his present post to facilitate a reorganization under which the two departments are to be merged. Sir Harold Brown will retain the title of Director-General of Munitions Production. He will be assisted by Lieutenant-General M. G. Taylor, C.B., C.M.G., D.S.O., who will have the title of Deputy Master-General of the Ordnance.

Lieutenant-General Taylor was born on 31st May, 1881. He obtained his commission in the Royal Engineers on 2nd May, 1900. In August, 1914, he was serving

as a regimental captain, and proceeded overseas, where he saw service in France, Belgium, Gallipoli and with the Egyptian Expeditionary Force, being awarded the C.M.G. and D.S.O. and brevets of major, lieutenant-colonel and colonel. He was mentioned in despatches six times.

After staff service in the Eastern Command, he commanded the 166th (South Lancs. and Cheshire) Infantry Brigade, Territorial Army, from 1927 to 1931, being promoted Major-General in May of that year. In 1932 he assumed command of the 46th (North Midland) Division, Territorial Army, which he vacated in April, 1934, when he was appointed Major-General in charge of Administration, Aldershot Command. He was promoted Lieutenant-General on 12th October, 1937.

The new composition of the Military Members of the Army Council is :—

Lieutenant-General the Viscount Gort, Chief of the Imperial General Staff (First Military Member).

Major-General C. G. Liddell, Adjutant-General to the Forces (Second Military Member).

Lieutenant-General Sir Reginald S. May, Quartermaster-General to the Forces (Third Military Member).

Engineer Vice-Admiral Sir Harold A. Brown, Director-General of Munitions Production.

General Sir Walter M. St. G. Kirke, Director-General of the Territorial Army.

The office of Fourth Military Member is vacant.

The average age of the Military Members of the Army Council on 1st July, 1914, was 57 ; before the recent changes it was 60 ; and after the changes, it fell to 55.

Mr. Hore-Belisha, Secretary of State for War, speaking in the House of Commons, announced that H.M. Government wished to place on record their high appreciation of the long and distinguished service rendered over many years to the State by those Senior Officers, who have vacated their posts, and of their public spirit in vacating them to facilitate these changes.

Promotions and Appointments.

The local rank of Lieutenant-General has been conferred upon the following :—

Major-General W. D. S. Brownrigg, C.B., D.S.O., Military Secretary to the Secretary of State for War, with effect from 3rd January, 1938.

Major-General Brownrigg who was born in April, 1886, obtained his Commission in The Sherwood Foresters in January, 1905, and was Adjutant from 1910 to 1913. During the Great War he served in Gallipoli, Egypt and Mesopotamia, was mentioned in despatches six times, was promoted Brevet-Major and Brevet Lieutenant-Colonel, and was awarded the Distinguished Service Order and the Order of St. Vladimir 4th Class with Swords.

His appointments since the War have included that of G.S.O.1 at the War Office 1923 to 1927 ; Assistant Adjutant and Quartermaster-General i/c of Administration, Shangai Defence Force, and China, from 1927 to 1931 ; Commander of the 159th (Welsh Border) Infantry Brigade, Territorial Army, from 1931 to 1933, and Commander of the 11th Infantry Brigade from 1933 to 1934. He was promoted Major-General in July, 1934, and since June, 1935, has commanded the 51st (Highland) Division, Territorial Army.

Major-General Sir Ronald F. Adam, Bt., D.S.O., O.B.E., Deputy Chief of the Imperial General Staff, with effect from 3rd January, 1938.

Major-General R. H. Haining, C.B., D.S.O., from the date of assuming his appointment as General Officer Commanding, The British Forces in Palestine and Transjordan.

The following appointments are announced :—

Lieutenant-General C. C. Armitage, C.B., C.M.G., D.S.O., to be Master-General of the Ordnance, India.

Major-General A. P. Wavell, C.B., C.M.G., M.C., to be General Officer Commanding-in-Chief, Southern Command. The War Office, in this connexion, have announced their intention to bring the General Officers holding the principal commands at home into closer touch with the central direction of Army policy.

Major-General A. F. Brooke, C.B., D.S.O., to be Commander of the Mobile Division, with effect from 24th November, 1937.

Major-General Brooke has acted as Director of Military Training at the War Office. In this capacity he has been in the closest touch with all the recent developments in connexion with Army mechanization and the formation of the Mobile Division. He was appointed to the Royal Artillery in 1902. During the Great War he served in France and Belgium, was mentioned in dispatches five times, promoted Brevet Lieutenant-Colonel, awarded the D.S.O. and bar and the Belgian War Cross.

From 1929 to 1932, he was Commandant of the School of Artillery and during the two succeeding years he was Army Instructor at the Imperial Defence College. Afterwards he commanded the 8th Infantry Brigade until the autumn of 1935, when he became Inspector of the Royal Artillery.

Major-General P. C. S. Hobart, D.S.O., O.B.E., M.C., to be Director of Military Training, the War Office, with effect from 24th November, 1937.

Major-General Hobart has acted as Deputy Director of Staff Duties at the War Office, which appointment he has held since March, 1937. He was appointed to the Royal Engineers in July, 1904, and transferred to the Royal Tank Corps in 1922. During the Great War he served in France and Belgium, in Mesopotamia and with the Egyptian Expeditionary Force. He was wounded, was five times mentioned in despatches, promoted Brevet Major and awarded the D.S.O., O.B.E. and M.C. He took part in the operations in the Mohmand country, 1908, and in Waziristan, 1919-1921. In the latter campaign he was mentioned in despatches and promoted Brevet Lieutenant-Colonel. From 1923 to 1927 he was an instructor at the Staff College, Quetta. In March, 1933, he was appointed Inspector, Royal Tank Corps and from April, 1934, until February, 1937, he was Commander of the Tank Brigade.

Major-General Sir Frederick A. Pile, Bt., D.S.O., M.C., to be Commander of the 1st Anti-Aircraft Division, Territorial Army.

Major-General Sir Frederick Pile was commissioned in the Royal Artillery in 1904 and transferred to the Royal Tank Corps in the rank of Major in 1923. During the Great War he served in France and Belgium, was three times mentioned in despatches, promoted Brevet Lieutenant-Colonel and awarded the D.S.O. and M.C. From 1925 to 1926 he was a General Staff Officer (2nd Grade) at the Royal Air Force School of Army Co-operation and from 1928 to 1932 he was Assistant Director of Mechanization at the War Office. He commanded the Canal Brigade in Egypt from 1932 to 1936 and was promoted to the rank of Major-General in February, 1937.

Major-General C. N. F. Broad, D.S.O., to be Major-General in charge of Administration, Aldershot Command, with effect from 1st January, 1938.

Major-General C. N. F. Broad was born in December, 1882. He entered the

Royal Artillery in 1905, and transferred to the Royal Tank Corps in 1923. He served in France and Belgium, being mentioned in despatches three times, awarded the Distinguished Service Order and the Belgian War Cross, and promoted Brevet Major and Brevet Lieutenant-Colonel.

After the War, he was a General Staff Officer (1st Grade) at the Staff College until 1921; Instructor, Tank Gunnery School, 1924–25; Chief Instructor, Royal Tank Corps Headquarters, Central School, 1925–27; and General Staff Officer (1st Grade) at the War Office, 1927–31. In 1931 he commanded the 1st Tank Brigade. From September, 1931 until 1934 he was Brigadier, General Staff, Aldershot Command, and went to India in 1935 to command the 4th (Quetta) Infantry Brigade. He was promoted Major-General in November, 1936.

Colonel (temporary Brigadier) D. G. Johnson, V.C., D.S.O., M.C., A.D.C., to be Commander of the 4th Division, with the temporary rank of Major-General with effect from 7th January, 1938.

Colonel (temporary Brigadier) Johnson was born in February, 1884, and obtained his commission (from the Militia) in the South Wales Borderers in July, 1903. During the Great War he served at Tsing-Tau (September–November, 1914); in France and Belgium and at Gallipoli. He was twice wounded and twice mentioned in despatches. He gained the Victoria Cross in November, 1918, while commanding the 2nd Bn. The Royal Sussex Regiment. For his distinguished services during the War he was also awarded the D.S.O. and Bar and the Military Cross.

He was granted the brevet rank of Lieutenant-Colonel in 1923 and in 1928 obtained command of the 2nd Bn. The North Staffordshire Regiment which he held until 1932. In 1933 he went to India and commanded the 12th (Secunderabad) Infantry Brigade until 1936, when he returned to this country to take up his present appointment of Commandant of the Small Arms School.

The appointment of Brigadier Johnson to command the 4th Division affords an example of an officer attaining to high rank in the Army without the aid of a p.s.c. qualification.

Colonel T. R. Eastwood, D.S.O., M.C., to be Commandant, Royal Military College, Sandhurst, with the temporary rank of Major-General, with effect from 12th January, 1938.

Colonel Eastwood was born in May, 1890, and obtained his commission in the Rifle Brigade in March, 1910. During the Great War he served in France and Belgium, at Gallipoli, and in Egypt, and later in Russia. He took part in the operations against German Samoa on 29th August, 1914. For his services during the War he was mentioned in Despatches five times, was promoted Brevet Major and Brevet Lieutenant-Colonel, and was awarded the D.S.O. and M.C. In 1918–19 he commanded the 12th Bn. The Rifle Brigade.

From 1934 until 1936 he commanded the 2nd Bn. The King's Royal Rifle Corps and since July, 1936, has been General Staff Officer, 1st Grade, 2nd Division. Colonel Eastwood is a graduate of the Staff College.

Major-General E. A. Beck, C.B., D.S.O., to be Director of Personal Services at the War Office, with effect from 16th January.

Major-General Beck was born on 16th March, 1880, and joined the Royal Scots Fusiliers in 1900. He served with the Mounted Infantry in South Africa. He was Brigade Major Home Forces and in France during the Great War from September, 1914, to September, 1916, and saw further service in France and Italy and was mentioned in despatches. He also saw service on the North-West Frontier in

1930–31. He was employed with the Egyptian Army from 1909 to 1912 and from October, 1935, to April, 1936, was A.D.C. to the King. After serving with the King's Own Yorkshire Light Infantry as Lieutenant-Colonel, he was promoted Colonel and became Major-General in 1936. He was Chief Instructor at the Small Arms School from 1925 to 1929 and was G.S.O.1 Scottish Command from 1933 to 1935.

Major-General the Hon. H. R. L. G. Alexander, C.S.I., D.S.O., M.C., Colonel 3rd Battalion 2nd Punjab Regiment, to be Commander of the 1st Division, with effect from 18th February, 1938.

Major-General the Hon. H. R. L. G. Alexander was born in December, 1891. He was commissioned in the Irish Guards in September, 1911, and went to France as a Lieutenant on the outbreak of the Great War. In 1917, at the age of 26, he commanded the 2nd Battalion, Irish Guards, with the acting rank of Lieutenant-Colonel. He was wounded twice, was mentioned in despatches five times, and was awarded the D.S.O. and M.C.

From May, 1922, to January, 1926, he commanded the 1st Battalion, Irish Guards, and then went to the Staff College. He was promoted Colonel in 1928, and commanded the Regiment and Regimental District, Irish Guards, until January, 1930, when he went as a student to the Imperial Defence College.

In October, 1934, he went to India having been appointed Commander of the Nowshera Brigade, in which capacity he saw considerable service on the North-West Frontier. He was twice mentioned in despatches in 1936 and awarded the C.S.I. for his services in the field. He was promoted to the rank of Major-General in October, 1937.

Colonel (temporary Brigadier) P. Neame, V.C., D.S.O., to be Commandant, Royal Military Academy, Woolwich, with the temporary rank of Major-General, with effect from 28th February, 1938.

Brigadier Neame was born in December, 1888, and obtained his commission in the Royal Engineers in 1908. He sailed overseas in 1914 and served in France and Belgium throughout the war. He gained the Victoria Cross in 1914 and in addition was five times mentioned in despatches, obtained brevet promotion to Major and Lieutenant-Colonel, and was awarded the D.S.O.

From 1919 to 1923 he was an instructor at the Staff College, and, after service on the staff of the Aldershot Command, was appointed to the General Staff in India. He was promoted Colonel in 1926 and granted the temporary rank of Brigadier in 1934. Brigadier Neame is a graduate of the Staff College and Imperial Defence College.

Colonel (temporary Brigadier) H. R. Pownall, C.B., D.S.O., M.C., to be Director of Military Operations and Intelligence, The War Office, with the temporary rank of Major-General, with effect from March, 1938.

Brigadier Pownall was born in November, 1887, and obtained his commission in the Royal Artillery in December, 1906. During the Great War he served in France and Belgium, was twice mentioned in Despatches, and was awarded the D.S.O. and M.C. He took part in the operations on the North-West Frontier of India, 1930–31, and for his services was mentioned in despatches and awarded a Bar to his D.S.O.

He was Assistant Secretary of the Committee of Imperial Defence from 1933 to 1935, Senior Assistant Secretary from 1935 to 1936, and became Deputy Secretary in 1936. In September, 1936, he was appointed Commandant of the School of Artillery. Brigadier Pownall is a graduate of the Staff College and Imperial Defence College.

Colonel (temporary Brigadier) B. C. T. Paget, D.S.O., M.C., to be Commandant Staff College, Camberley, with the temporary rank of Major-General.

Brigadier Paget was born in September, 1887, and was commissioned in the Oxfordshire and Buckinghamshire Light Infantry in November, 1907. During the Great War he served in France and Belgium, both at regimental duty and on the staff, and was wounded. He was mentioned in despatches four times, was promoted Brevet Major, and was awarded the Distinguished Service Order, the Military Cross and the Italian Silver Medal for military valour. In 1925 he served with the Military Mission to Morocco, attached to the Headquarters of the French Army during operations against Abd-el-Krim in the Riff.

In 1934 he was appointed a General Staff Officer 1st Grade,, at the War Office, and since February, 1937, he has commanded the 4th (Quetta) Infantry Brigade. Brigadier Paget is a graduate of the Staff College and Imperial Defence College.

Major-General W. G. Holmes, D.S.O., to be Commander, 42nd (East Lancashire) Division, Territorial Army, from 1st March, 1938.

Major-General Holmes was born in August, 1892, and obtained his commission in the Royal Welch Fusiliers in 1911. He was promoted to the rank of Major-General in June, 1937, and is the youngest Major-General in the Army.

During the Great War he served in France and Belgium, and in Italy, and was wounded twice. He commanded the 1st Battalion Royal Welch Fusiliers from September, 1916, until after the end of the War. He was mentioned in despatches four times, promoted Brevet Major and Brevet Lieutenant-Colonel, and awarded the Distinguished Service Order and Bar and the Italian Silver Medal for Military Valour. After the Great War, he saw further service in Waziristan, 1919–21 and 1921–24, and the Mahsud Operations, 1919–20.

In 1923, he transferred to the East Lancashire Regiment and commanded the 2nd Battalion from 1929 to 1933. He was promoted to the rank of Colonel in 1933 and commanded the 8th Infantry Brigade from 1935 until his promotion last year.

Colonel (temporary Brigadier) J. S. Drew, D.S.O., M.C., A.D.C., from Brigadier, General Staff, Southern Command, to be Commander, 52nd (Lowland) Division, Territorial Army, with the rank of Major-General, from 30th March, 1938.

Colonel Drew was born in September, 1883, and was commissioned in the Cameron Highlanders in January, 1902. During the Great War he served in France and Belgium, was mentioned in despatches six times, promoted Brevet Major, and awarded the D.S.O. and M.C. He was a General Staff Officer in the Irish Command in 1920 and at the Staff College from 1923 to 1925. From 1929 to 1932 he was Assistant Commandant and Chief Instructor, Netheravon Wing, Small Arms School, and then served at the War Office until 1935 as Assistant Director of the Territorial Army. Since February, 1936, he has been Brigadier-General Staff, Southern Command.

Lieutenant-General Sir Robert Gordon-Finlayson, K.C.B., C.M.G., D.S.O., Colonel Commandant, Royal Artillery, to be General Officer Commanding The British Troops in Egypt, with effect from 12th April, 1938.

Lieutenant-General Sir Robert Gordon-Finlayson was appointed to the Royal Artillery in 1900, and served with the Imperial Yeomanry in 1902. He was Adjutant in 1910. During the Great War he served in France and Belgium and in Russia, being Deputy Commander, North Russia (with the temporary rank of Brigadier-General), from May, 1918, to May, 1919. He was mentioned in despatches seven times, promoted Brevet Lieutenant-Colonel and Brevet Colonel, awarded the C.M.G.

and D.S.O., the Order of St. Vladimir, 4th Class, with Swords, and the Order of the Star of Roumania, 3rd Class. From 1928 to 1931, he was Commander, Royal Artillery, 3rd Division, and then served in India as Commander, Rawalpindi District. He returned from India in 1934 to command the 3rd Division, which appointment he relinquished in 1936 consequent on his promotion to Lieutenant-General.

Colonel (temporary Brigadier) R. V. Pollok, C.B.E., D.S.O., from Commandant, Senior Officers' School, Sheerness, to be General Officer Commanding, Northern Ireland District, with the rank of Major-General, from 7th May, 1938.

Colonel Pollok was born in February, 1884, and obtained his commission in the 15th Hussars in March, 1903. He transferred to the Irish Guards in the rank of Captain in 1915. During the Great War, he served in France and Belgium and was wounded four times. He was twice mentioned in despatches and was awarded the C.B.E., D.S.O., and French War Cross. He commanded the 1st Infantry Brigade from 1931 to 1935, since when he has been Commandant of the Senior Officers' School.

Colonel (temporary Brigadier) W. G. Lindsell, D.S.O., O.B.E., M.C., from Commander, Royal Artillery, 4th Division, to be Major-General in charge of Administration, Southern Command, with the rank of Major-General, from 28th May, 1938.

Colonel Lindsell was born in September, 1884, and obtained his commission in the Royal Artillery in December, 1903. During the Great War he served in France and Belgium, was mentioned in despatches four times, and was awarded the D.S.O., O.B.E., M.C., and French War Cross. From 1930 to 1933 he was a General Staff Officer, 1st Grade, at the War Office and was then appointed Commandant of the Senior Officers' School. He was Deputy Military Secretary at the War Office from 1935 to 1936, since when he has been Commander, Royal Artillery, 4th Division. Brigadier Lindsell is a graduate of the Staff College and Imperial Defence College.

General

5th Royal Inniskilling Dragoon Guards.—The 5th Royal Inniskilling Dragoon Guards were inspected on 18th November, 1937, at Colchester, by their Colonel-in-Chief, His Majesty the King of the Belgians. On arrival at Colchester, the King was met by the Lord Lieutenant of Essex and the Mayor and drove in procession to the cavalry barracks. Here he was received by Lieutenant-General Sir Tom Bridges and Brigadier R. Evans, Colonel of the Regiment. After the inspection of the parade, the Regiment, under the command of Lieutenant-Colonel E. S. D. Martin, D.S.O., M.C., marched past His Majesty. The King then expressed his admiration at the splendid appearance and turn out of the troops, recalled to memory the exploits of his Regiment in the campaigns of Marlborough and Wellington, and wished all ranks every good luck and happiness for the future.

The Buffs.—H.M. The King of Denmark, Colonel-in-Chief, The Buffs, visited the 2nd Battalion of his Regiment on 15th December, 1937, at Bordon Camp. Most of the men were on Christmas leave and there was no parade, but His Majesty was given a Royal Salute by the guard as the Danish Flag was flown. Major-General Sir John Kennedy, Colonel, The Buffs, and Lieutenant-Colonel G. F. Hamilton, M.C., Commanding the 2nd Battalion, accompanied His Majesty on his inspection of reservists' training and barrack rooms. Danish orders were presented by the King to Officers and Warrant Officers.

Recruiting.—The total intake of recruits for the Regular Army during the nine months ending on 25th December, 1937, amounted to 18,586. This figure is 3,242 higher than the corresponding figure for the same period the year before.

During the week ending on 8th January, 1938, no less than 1,215 recruits enlisted. This total is 304 higher than the corresponding figure for the same week last year and made this week the best since 1933.

IRISH BATTALIONS.—The two new Irish Battalions sanctioned under the rearmament programme have been rapidly formed. The 2nd Battalion, The Royal Irish Fusiliers, have sailed for Malta, with a strength of 20 Officers and 550 Other Ranks. Before the embarkation of the 2nd Battalion, H.R.H. the Duke of Gloucester presented new Colours to both battalions of the Regiment at St. James's Palace. This ceremony, it is claimed, was unique in that it was the first occasion that both battalions of a Regiment of the Line received new Colours on the same parade.

The 2nd Battalion, The Royal Inniskilling Fusiliers, have crossed from Ireland to Catterick for service with the 5th Division. About fifty pieces of plate belonging to the Officers' and Sergeants' Messes were handed back on 12th January, 1938, to Lieutenant-General Sir Travers Clarke, Colonel, The Royal Inniskilling Fusiliers, by General Sir Felix Ready—Chairman of the Council of the Royal United Service Institution, where the plate had been housed since the disbandment of the Regiment in 1922. Officers from the 2nd Battalion present at the ceremony included Lieutenant-Colonel H. A. Allen, Major R. N. Gale—General Staff, the War Office, and Captain T. A. Moody. (See photograph facing p. 69.)

GILL MEMORIAL SCHOLARSHIPS AND EXHIBITIONS AT BRIGHTON COLLEGE.—About six Gill Memorial Scholarships and Exhibitions are offered for competition among sons of Army Officers. Candidates will take the ordinary June Common Entrance Examination at their own preparatory schools. Admission to compete for the Scholarships and Exhibitions is by nomination, and candidates must be :—

(1) under the age of 14 years on 1st June, 1938, and
(2) the sons of officers who held or have held a commission in the Regular Army, or, failing such candidates, the sons of officers who held or have held a commission in the Reserve or Auxiliary Military Forces.

The annual value of the Scholarships and Exhibitions ranges from £75 to £30, thus reducing the amount payable by a parent or guardian to between £75 and £120 respectively, inclusive of necessary extras. Scholarships and Exhibitions are tenable for three years, but the period may, on the recommendation of the Headmaster, be extended to four years. Successful candidates will enter Brighton College at the end of the summer holidays. Applications for nomination by the War Office (accompanied by Birth Certificate and Certificates of Conduct covering the previous two years) should reach the Under-Secretary of State (C.1), The War Office, London, S.W.1., not later than 30th April, 1938.

COMMISSIONS FROM THE RANKS.—Fifteen non-commissioned officers were selected for admission to the Royal Military College, Sandhurst, in January, 1938, for a course of 18 months' training, under the scheme whereby non-commissioned officers of the Regular Army may be granted commissions.

EMPLOYMENT BUREAU FOR RETIRED OFFICERS OF THE REGULAR ARMY.—In the Army Notes for February, 1937, a brief account of the activities of the Employment Bureau for the year 1936 was published. The progress then noted has been well maintained in 1937, for the number of fresh registrations was 437 (133 of the Indian Army). Employment directly found by the Bureau shows 121 officers placed (40 of the Indian Army). Indirect employment, generally assisted by the Bureau, was obtained by 175 officers (28 of the Indian Army) ; so that, in all, 296 officers have found jobs in the year. As soon as officers know they have to retire it would be well

if, when they happen to be in London, they would pay a personal visit to the Bureau, discuss prospects and get advice. It is this preliminary knowledge of the various types of jobs, most suitable to the officer, how to qualify for any particular line of employment, and how to avoid the many snares and pitfalls which may mislead the unwary that is a very important part of the work of this Bureau. The address is "Lion House," 72 Red Lion Street, Holborn, W.C.2.

FREETOWN GARRISON.—Freetown, Sierra Leone, West Africa, is again to be provided with a regular garrison in peace to man its coast defences. The coast defences will remain substantially the same as they are at the moment, though certain modifications and additions will be made to adapt them to modern requirements. An advance party has recently arrived in Freetown to carry out the preparatory work.

The coast defence units will consist of British European and African personnel. The European personnel will be accommodated in the old barracks on Tower Hill, and for the African personnel a new cantonment is to be built. By arrangement with the Government of Sierra Leone the recruiting and training of the African personnel have commenced under the ægis of the Sierra Leone Battalion, Royal West African Frontier Force, and, until their cantonment is ready, they are to be housed in the Royal West African Frontier Force depot.

TERRITORIAL ARMY

TERRITORIAL ARMY CHANGES.—Mr. Hore-Belisha, Secretary of State for War, made the following announcements in the House of Commons on the subject of the recent Territorial Army changes. The measures, he declared, were for the most part designed by His Majesty's Government to recognize the full status of the Territorial Army as an integral part of our defence system, and to emphasize the fact that to-day that Army had a claim to the same sources and standards of instruction as the Regular Army.

In the first place, officers appointed as Commanders of Territorial Army Infantry Brigades or as Commanders, Royal Artillery, of Divisions, whether they were Regular or Territorial Army Officers, would be given the rank of Brigadier. Territorial Army Officers who have held that rank for three years or more are to be allowed to retain it after ceasing to hold the appointment.

Secondly, Regular Officers appointed Brigade Majors of Territorial Army Brigades would be seconded for the purpose, a course which is followed in the case of Regular Army Brigades. This change, while removing an invidious distinction, would also encourage the release from their units of the best qualified regular officers for these appointments, as the regular units would not go short of officers in their absence, and those in the lower ranks who remain would not be deprived of the promotion which seconding ordinarily gave to them. With the same object in view, the additional pay of Adjutants of Territorial Army units would be raised from 3s. 6d. a day to 5s. od. a day, the rate being drawn by Adjutants of comparable Regular Army units.

Similarly, Warrant Officers Class II or Non-Commissioned Officers who act as Serjeant-Majors of Territorial Army units, who now receive the pay of their substantive rank, with 2s. od. a day additional pay, would in future have their pay made up to that of Warrant Officers Class I appointed as Regimental Serjeant-Majors of Regular units. In the matter of service dress uniform also they are to be treated as Warrant Officers Class I.

In future there would be no limitation on the appointment of Territorial Army Officers to command Divisions, Brigades, Divisional Artillery or other formations which consist solely of Territorial Army troops. Although it was realized that the Territorial Army officer cannot frequently give the necessary time to hold such commands or obtain the experience of handling mixed forces, he would be considered on merits without any discrimination, and, further, his opportunities of receiving higher instruction would be increased. To this end provision was being made for two vacancies at the Staff College, and one vacancy at the Imperial Defence College for Territorial Army Officers, who would receive the pay and allowances of their rank during periods of attendance at those Colleges.

Suggestions had been made, not always unanimously, for facilitating the business of the Territorial Army. In order that these suggestions might be fully examined, a number of gentlemen well acquainted with the Territorial Army have been asked to make an enquiry with the following terms of reference :—

To examine and report on the general administration of the Territorial Army with special reference to :—

(i) The organization and finance of County Associations.

(ii) The reduction of correspondence and the simplification of administration between the War Office and County Associations and between County Associations and Units.

(iii) The reduction of office work in units and the system of providing clerical assistance.

The members of the Committee will be :—

Captain the Lord Strathcona and Mount Royal, Parliamentary Under-Secretary of State for War (Chairman) ;

Major-General Sir John Brown, Deputy-Director-General of the T.A. ;
Colonel the Viscount Cobham, Vice-Chairman, Council of T.A. Associations ;
Brigadier-General R. W. Hare, late The Royal Norfolk Regiment ;
Colonel Sir Robert Johnson, Deputy Master and Comptroller, The Royal Mint ;
Mr. J. R. Wade, Assistant Secretary, The War Office ;
Major J. M. Reddie has been appointed Secretary to the Committee.

Appointments

His Majesty the King has approved the following appointments :—

Deputy Director-General.—Major-General Sir John Brown, K.C.B., C.B.E., D.S.O., T.D., D.L., J.P., who, in November, 1937, was granted the local rank of Major-General on his appointment as Deputy Director-General of the Territorial Army, has now been promoted to substantive rank. As a consequence of this promotion a new classification " Major-Generals : Territorial Army " will in future be shown in the Monthly Army List and the name of Sir John Brown will be the first to appear under this heading.

Colonel (temporary Brigadier) C. F. Liardet, C.B., D.S.O., T.D., Territorial Army, to be Commander, The London Division, Territorial Army, with the rank of Major-General, with effect from 23rd June, 1938.

Brigadier Liardet, who was born in 1881, joined the Lancashire Artillery in 1899 and was transferred to the Lancashire and Cheshire R.G.A. on the formation of the Territorial Force. He was promoted Major in 1914 and proceeded overseas in April 1916. During the War he served both at Regimental duty and on the staff, was mentioned in despatches five times, being awarded the D.S.O. and pro-

moted brevet Lieutenant-Colonel. After the War he was employed on the General Staff of the XIIIth Corps in France and was demobilized in April 1919. Since March, 1934, he has been C.R.A. of the 47th (2nd London) Division, T.A. (now the London Division, T.A.). He was awarded the C.B. in 1937. Brigadier Liardet is a well-known member of a firm at Lloyds.

Lieutenant-Colonel and Brevet-Colonel H. Willans, D.S.O., M.C., T.D., Artists Rifle, Territorial Army, to be Commander 2nd (London) Infantry Brigade, Territorial Army, with the temporary rank of Brigadier, with effect from 31st May, 1938.

Lieutenant-Colonel J. O. Shepherd, M.C., T.D., Royal Artillery, Territorial Army, to be Commander Royal Artillery, 51st (Highland) Division, Territorial Army, with the temporary rank of Brigadier, with effect from 20th May, 1938.

These appointments together with that of Major-General Sir John Brown, K.C.B., C.B.E., D.S.O., T.D., as Deputy Director-General of the Territorial Army, are in pursuance of the policy of associating Territorial Army Officers more closely with the higher direction of the Territorial Army.

Lieutenant-Colonel W. R. D. Robertson, M.C., T.D., Royal Artillery, Territorial Army, has been selected to attend the 1938 Course at the Imperial Defence College (commencing on 18th January, 1938).

Recruiting

During December, 1937, 3,032 recruits were enlisted. This is a record for any December since the Territorial Army was reformed after the War. Moreover, the recruiting results for the calendar year 1937 are themselves a record in comparison with any previous year since the War.

A comparative table for recent years shows the number of recruits enlisted during each calendar year :—

In 1932	17,821
„ 1933	31,448
„ 1934	24,947
„ 1935	24,634
„ 1936	36,514
„ 1937	45,320

The strength of the Territorial Army is now 9,046 Officers and 149,797 Other Ranks, while the position of the first three Divisions on 1st January, 1938, is as shown below :—

	Peace Establishment.	*Strength.*	*Per cent. of Estab.*
51st (Highland) Division	9,900	9,413	95.1
42nd (East Lancashire) Division	9,851	8,824	89.6
49th (West Riding) Division	9,858	8,782	89.1

The largest increases during December were made by the 1st Anti-Aircraft Division whose strength went up by 438 Other Ranks, and by the 2nd Anti-Aircraft Division whose increase was 223.

OFFICERS TRAINING CORPS

1937 may be considered as a year in which satisfactory progress has been made in training and in the introduction of new equipment in both O.T.C. Divisions. The year commenced with a conference held at the Staff College, Camberley under the direction of the C.I.G.S. at which O.T.C. matters were discussed ; in particular, the requirements of modern training and the revision of the certificate syllabus.

The interchange of ideas was of great value to Regular officers who attended, and also, it is believed, to representatives of the O.T.C. Following this conference the introduction of modern equipment, especially vehicles, may be said to have begun in the Senior Division during the past year. The results of the year's work have exceeded all expectations and are most creditable to the keenness, hard work and initiative of all those who have been concerned.

During the last two years emphasis has been laid on the training of instructors and on the need to train members of the O.T.C. as individuals whose services may one day be required as officers. In almost every contingent serious and successful efforts have been made to organize the training of officers and cadets in these directions.

An increase in the membership of both Divisions has been recorded. In the Senior Division this increase amounted to 20 officers and 320 officer cadets. In the Junior Division the increase totals 28 officers and 1,105 officer cadets.

INDIA

Mechanization

The British Government has acceded to the request of the Marquis of Linlithgow, Viceroy of India, for assistance in re-equipping portions of the Army in India on a mechanized basis and is to find the sum of £200,000 annually for the next three years, making £600,000 in all. This decision has been received with lively satisfaction in political and military circles in India. For some years, successive Commanders in Chief have been anxious to accelerate the pace of mechanization but have been handicapped by lack of funds. This difficulty has now been removed.

Four of the five British Cavalry Regiments serving in India are to be mechanized and the fifth is to sail for home and be struck off the Indian establishment. The change will be gradual. One horsed cavalry regiment will be sent home each year and will be replaced by a mechanized and fully trained light-tank cavalry unit from England. At the end of four years, the changeover should be complete.

The light-tank companies, Royal Tank Corps, serving in India, are to be reduced gradually in conformity with the increase of mechanized cavalry and the personnel are to be transferred to the home establishment.

Some progress has already been made with the mechanization of the Royal Artillery in India. Medium Brigades have been converted and a start has been made with Brigades of Field Artillery. The Royal Horse Artillery also has been experimenting with mechanization under local conditions. These measures are to be accelerated.

Four Battalions of British infantry are to be converted to machine-gun battalions. These are: 1st Battalion The Royal Fusiliers, Jhansi; 1st Battalion, The Devonshire Regiment, Rawalpindi; 1st Battalion, The Royal Scots Fusiliers, Karachi; and 2nd Battalion, The Argyll and Sutherland Highlanders, Secunderabad. This reorganization should be completed very quickly and is expected to take a period of only a few months. M.-G. battalions will function as divisional troops in accordance with the new home organization.

All remaining British Infantry battalions are to be converted to rifle battalions.

No proposals have been outlined yet for the mechanization of Indian units. With the mechanization of the bulk of the British Cavalry at home, the Indian Cavalry remains the sole important reserve of Regular horsed cavalry within the British Empire. Indian infantry units, which are largely employed in the moun-

tainous regions of the N.W. Frontier, are not considered to be suitable subjects for mechanization at this early stage. Tracked or wheeled vehicles, moreover, cannot supplant the Army mule for the purposes of transportation of supplies and carriage of pack artillery on rough hill-sides.

These measures, which affect chiefly the British elements of the Army in India, will restore the balance between M.-G. and rifle battalions serving in India and their counter-parts on the Home establishment and will give a new lease of life to the Cardwell system, which in spite of a heavy barrage of criticism, continues to show remarkable vitality.

WAZIRISTAN

The Waziristan campaign, 1936–37, has been brought to a successful conclusion, and many of the additional troops have marched or railed back to their peace stations. These include the 9th (Jhansi) Infantry Brigade, 1st Battalion, The Royal Norfolk Regiment, 2nd Battalion, The Argyll and Sutherland Highlanders, and the 64th and 66th Batteries, R.A. General Sir John Coleridge, Commanding-in-Chief the Wazir Force, has handed over military command and political control to Major-General A. F. Hartley, Commander of the Waziristan District, who will be supported by Major H. Johnston as his Political Adviser. His Majesty the King has approved, in successive Gazettes, numerous awards to officers and other ranks for valuable, gallant, and distinguished services in the field in connection with the operations in Waziristan. The Secretary of State for India—The Marquess of Zetland, H.E. The Viceroy—The Marquess of Linlithgow and the Commander-in-Chief—General Sir Robert Cassels, have offered General Coleridge and the troops under his command their warm congratulations on the manner in which they have carried out their difficult task.

The Wazir Force, as such, has ceased to exist, and will be replaced by the Waziristan District. General Coleridge has returned to his Headquarters at Rawalpindi, whence he will continue to exercise general control over military plans and movements in Waziristan.

Since 22nd April, 1937, Sir John Coleridge has been in military command and political control in the North and South Waziristan Agencies and the tribal areas under the Deputy Commissioners of Bannu and Dera Ismail Khan Districts. The task entrusted to him by the Government of India was to restore peaceful conditions in Waziristan and he was given full control of all land, air and auxiliary forces, stationed in the area. During the course of the campaign, troops have visited the Wazir, Mahsud and Bhittani territories and, aided by tribal labour, have built about 105 miles of road in mountainous country. The peace terms, decided upon by the Government of India, have been accepted by the tribes and measures have been taken to ensure the fulfilment of the agreements concluded with them.

Some comparisons with the Tirah campaign of 1897–98 may be of interest. The Tirah campaign lasted for six months and necessitated the employment of 52,000 men, whereas the Waziristan operations lasted nearly one year and demanded the services of about 61,000 men. In Tirah, over 1,100 of our men were killed and wounded, while over 1,400 died of disease. In Waziristan, the comparable figures were 927 killed and wounded with only 74 deaths from sickness. This low figure for losses from disease speaks eloquently for the high standard of professional ability obtaining in the R.A.M.C. and the Indian Medical Service.

The main lessons of the campaign have been brought out in the article entitled "Operations in the Lower Khaisora Valley, Waziristan, 1937," by Major D. A. L. Mackenzie, published in the JOURNAL for November, 1937.

N.W.F.P. Panoramas.—Students of North-West Frontier fighting will find in the Library a comprehensive set of panoramas (air obliques) of the terrain in the Mohmand country, which has been the scene of recent activities. These photographs can be studied on application to the Librarian and include the localities of Wucha Jawar, Nahakki Pass, Point 4080, Barang Valley, Bargholai, and Lakarai.

Short Service and Medium Service R.A.F. Officers for the Indian Army.—Arrangements have been made for the selection of a strictly limited number of officers who are serving or have served on short service commissions (including those extended to medium service) in the general duties branch of the Royal Air Force for appointment to permanent commissions in the Indian Army, on or after the completion of their period of service on the active list.

To be eligible for consideration officers must :—

(i) have been appointed to short service commissions subsequent to 1920.
(ii) have been recommended for a permanent commission in the Royal Air Force by an air or other officer commanding,
(iii) not have been retired from the Royal Navy, British Army or Indian Army, under any reduction scheme, and
(iv) be fit for general service in India.

No officer will, however, be accepted for transfer unless his reports and qualifications show that he is likely to be in all respects suitable for the Indian Army.

FOREIGN

FRANCE

By a unanimous vote of the 603 Deputies comprising the French Chamber which has thus set an example to other democracies, the sum of £36,000,000 was voted for the provision of guns, armoured fighting vehicles and other weapons, for the needs of the Army during 1938. During the course of the debate, Mons. Daladier —Minister for Defence, declared himself strongly opposed to any suggestions for reducing the period of military service, now fixed at two years. The Army, he affirmed, was the advanced guard of national defence and must be in a state of constant readiness to shield the home-land. In the immediate future, 387,000 French soldiers might be faced on the North-East frontier by an Army of 1,000,000, and on the South-East by a further 300,000. This situation, he declared, did not permit of any relaxation in matters of defence.

The fortifications of the North-East frontier were being extended so as to include certain portions of the Northern frontier. Defences were under construction in the Jura also, but at this point France's liberty of action was hampered by certain treaties with Switzerland. In an era of unilateral denunciation of treaties, however, France had not the slightest intention of breaking her pledged word.

Mons. Daladier further stated that he was absolutely satisfied with the results of the nationalization of French armament factories. This measure, he announced, had improved both the quantity and the material produced.

This view, however, is contrary to the opinion expressed by General Weygand—late Chief of the General Staff, in his book *La France est elle défendue ?* in which he declared that the decision to nationalize the armament factories was disastrous. The influence of recent social legislation and the introduction of the forty-hour week

in the factories, he wrote, had raised the costs of production to such high levels that the country was not obtaining full value for the credits voted by Parliament.

PORTUGAL

The visit of a British Military Mission in February, 1938, to Portugal, has focussed attention upon the numerous military problems, which confront that country. The objects of the Mission are to strengthen the ties of close friendship with our old Ally and to establish personal contacts with the Portuguese political and military chiefs. The Portuguese Army—like many others—has stood for years in need of thorough overhaul and reform. In view of the Spanish Civil War and the increased tension throughout the world, the Government has been compelled to act with vigour and to take strong measures to put its military house in order.

The Army is organized in two fractions: The Home Forces and the Colonial Forces. The former consist of the active army and the reserves and are under the control of the Ministry of War. The annual contingent of recruits, furnished by the law of universal and compulsory service, numbers about 24,000. This low figure is due to the abnormal number of annual exemptions which, of late years, have amounted to 38,000 men. The Budgetary effectives for 1936–37 are shown as 3,164 Officers, 23,130 Other Ranks (belonging to the Permanent and Auxiliary cadres) and 26,000 recruits under training. Men called up for service carry out fifteen months active training, shortly to be increased to eighteen months, and are legally liable for twenty years active and reserve service combined.

The position of junior officers has been particularly unsatisfactory. There are many subalterns with twenty-two years service as such and the stagnation in the higher ranks has lead to inefficiency and waste.

Undue emphasis has been laid on mere trimmings, and Dr. Salazar, the Prime Minister has remarked that Portugal spent as much on military bands as on her Air Force. All this is to be changed, and the existing military bands are to be cut down from thirty-two to eight. This particular measure of retrenchment may possibly hold a lesson for our own Army where, it is alleged, the excessive numbers of bands make heavy demands on the man-power of Regiments and on the private purses of the Officers. With effect from 1st January, 1938, the Government has announced sweeping measures of reform. These include organization, rearmament, pay, pensions, promotions and introduction of age limits for officers, with time sales for appointments.

Infanty regiments (each consisting of H.Q. and two battalions) are to be reduced from twenty-one to sixteen. The two cyclist battalions will be disbanded. One extra regiment of light infantry and one battalion of armoured cars are to be created. All three machine-gun battalions and one horsed cavalry regiment will be mechanized, the latter in order to provide M.-G. squadrons for service with cavalry brigades. Mechanization of horse and field artillery is to be undertaken. And horsed cavalry regiments will suffer reduction from nine to seven.

These measures are all to the good, but critics will observe that urgent problems of higher organization appear to have been left untouched. The Army, at present, disposes of no permamently organized formation in peace, higher than a cavalry brigade or infantry regiment. In an emergency, Divisions and Army Corps can, of course, be improvised from existing formations, but owing to lack of combined training, the efficiency of these larger bodies will not at first be high. This may constitute a vital flaw in the ability of the Army to fulfil its role.

UNITED STATES

The United States Army has carried out a large-scale test of motorized marching with a formation known as "P.I.D." or "Proposed Infantry Division." This experimental formation, comprising 9,200 men and over 1,100 vehicles, transporting 1,000 tons of supplies and equipment motored 326 miles in just under thirteen hours. The 6th, 9th and 23rd Infantry Regiments, each accompanied by a brigade of mechanized artillery and auxiliary services, marched in three brigade groups. The artillery included both field and medium batteries, the latter being drawn by 10-wheeler tractors.

A steady pace of 30 m.p.h. was set by Divisional H.Q. at the head of the column, and, allowing for routine halts, an average of 25 m.p.h. was maintained over the journey. The length of the column totalled about forty miles, or the equivalent of less than two hours motoring time. The weather was dry and the troops suffered from dense clouds of alkali dust thrown up by the wheels of this host of motor vehicles. From a mechanical point of view, this remarkable march reflected high credit upon the reliability of U.S. motor vehicles and upon the standard of army driving and maintenance.

Tactically speaking, however, many questions remained unanswered. No attempt was made to simulate the effects of enemy air action against the motor columns, which marched purely under the conditions of peace. The weather, moreover, was favourable, and the going hard. But, in war the climate is often vile and road conditions appalling. Air attacks on motor columns—even though escorted by fighter aircraft—are almost inevitable, and are likely to cause confusion and delay. Further experiments, therefore, tending to demonstrate how far and how fast the Division may be expected to march on muddy roads and in the teeth of air opposition would be most instructive.

VALUE OF INFANTRY.—"The wars in Spain and in China have demonstrated again that tanks and aviation are valuable auxiliaries, but that neither of these arms can bring about a decision in land operations. For this we must still look to the man on foot. The new arms can aid him; they cannot replace him." This extract is taken from the annual report to the Congress of the United States, issued by General Malin Craig—Chief of Staff of the U.S. Army. As no fair-minded person could accuse General Craig of being either "reactionary" or "hide-bound," his opinion deserves to carry special weight.

AIR NOTES

ROYAL AIR FORCE

The undermentioned promotions were made with effect from 1st January, 1938 :—

AIR COMMODORES TO BE AIR VICE-MARSHALS.—J. S. T. Bradley, O.B.E., W. Sholto Douglas, M.C., D.F.C., J. H. S. Tyssen, M.C., D. C. S. Evill, D.S.C., A.F.C.

GROUP CAPTAINS TO BE AIR COMMODORES.—R. P. Willock, F. G. D. Hards, D.S.C., D.F.C., W. A. McClaughry, D.S.O., M.C., D.F.C., A. A. B. Thomson, M.C., A.F.C.

WING COMMANDERS TO BE GROUP CAPTAINS.—F. H. Coleman, D.S.O., K. M. St. C. G. Leask, M.C., H. W. G. J. Penderel, M.C., A.F.C., C. N. Lowe, M.C., D.F.C., R. H. M. S. Saundby, M.C., D.F.C., A.F.C., A. W. Mylne, J. K. Summers, M.C., J. W. Woodhouse, D.S.O., M.C., J. L. Vachell, M.C., D. F. Stevenson, D.S.O., O.B.E., M.C., G. E. Livock, D.F.C., A.F.C., W. J. Shields, J. Kyle, M.R.C.S., L.R.C.P. A. F. Rook, O.B.E., M.R.C.P., M.R.C.S., D.P.H.

HONOURS AND AWARDS.

The King has been graciously pleased to approve the following awards :—

D.S.O.—Group Captains N. H. Bottomley, C.I.E., A.F.C., J. C. Slessor, M.C., A. Lees, A.F.C.

D.F.C.—Squadron Leaders L. de V. Chisman, R. H. Carter, G. W. Tuttle, T. M. Abraham ; Flying Officer F. A. Holmes.

A.F.C.—Squadron Leaders A. W. B. McDonald, F. V. Beamish, W. L. Freebody, A. G. Loton (R.A.F.O.) ; Flight-Lieutenant (Lieutenant-Commander, R.N.) I. R. Grant ; Flying Officer A. E. Clouston (R.A.F.O.).

APPOINTMENTS.

The following appointments have taken, or will take, effect as from the dates shown :—

AIR VICE-MARSHALS.—P. H. L. Playfair, C.B., C.V.O., M.C., as Air Officer Commanding, No. 1 (Bomber) Group, to date 21st February ; H. R. Nicholl, C.B.E., as Air Officer Commanding, R.A.F., Middle East, from a date in March, 1938 ; C. T. Maclean, C.B., D.S.O., M.C., as Air Officer Commanding, No. 2 (Bomber) Group (date to be announced).

AIR COMMODORES—(Now Air Vice-Marshall) J. H. S. Tyssen, M.C. to Headquarters, R.A.F. Iraq, Hinaidi, as Air Officer in charge of Administration, to date 20th November. A. C. Wright, A.F.C., to Bomber Command, Uxbridge, as Air Officer in charge of Administration, to date 8th October ; T. L. Leigh-Mallory, D.S.O., to No. 12 (Fighter) Group in Command, to date 14th December ; T.E.B. Howe, C.B.E., A.F.C., to No. 12 (Fighter) Group, Hucknall, as Senior Air Staff Officer and temporary Air Officer Commanding, to date 20th November ; E. W. Norton, D.S.C. to Headquarters, R.A.F., Far East, Singapore, as Air Officer in Charge of Administration, to date 28th December ; A. A. B. Thomson, M.C., A.F.C. to be Air Officer Commanding, No. 3 (Bomber) Group, to date 14th February.

GROUP CAPTAINS.—G. C. Pirie, M.C., D.F.C., as Air Attaché, Washington, to

date 18th October; R. H. Kershaw, to No. 203 (General Reconnaissance) Squadron, Basrah, in command, to date 9th November; F. P. Don, O.B.E., to Headquarters, Bomber Command, Uxbridge, for Air Staff Duties, to date 10th November; R. M. Drummond, D.S.O., O.B.E., M.C., to Headquarters, R.A.F., Middle East, Cairo, as Senior Air Staff Officer, to date 20th November; J. J. Breen, O.B.E., to No. 4 Bomber Group, Linton-upon-Ouse, as Senior Air Staff Officer, to date 27th November; A. H. Jackson, to R.A.F. Station, Thornaby, in command, to date 1st December; A. H. Orlebar, A.F.C., to R.A.F. Station, Northolt, in command, to date 3rd January, 1938; D. F. Stevenson, D.S.O., O.B.E., M.C., to Air Ministry as Deputy Director of Operations, to date 4th January.

WING COMMANDERS.—(Now Group Captain) J. L. Vachell, M.C., as Air Attaché, Berlin, to date 1st November; A. S. G. Lee, M.C., for duty with the Turkish Government, to date 15th October.

ROYAL AIR FORCE EXPANSION.

The expansion of the Royal Air Force announced by the Government in May, 1935, has proceeded according to schedule, and the following gives a general indication of the progress:—

NEW STATIONS.—It was estimated that 50 new stations and armament training camps would be required; of these, 26 have already been opened, and 20 sites have been selected for future construction.

RECRUITING.—Since 1st April, 1935, some 4,100 pilots have been selected and the total number of airmen entered from the same date is approximately 28,300.

About 5,650 boys are undergoing training as aircraft apprentices at Halton and Cranwell, and 1,130 as boy entrants, elsewhere.

The total strength of the force is now approximately 65,000.

ORGANIZATION.

NEW FORMATIONS.—The following station headquarters were formed, or will form, on the dates shown:—

Lee-on-the-Solent, on 1st January.

Stradishall, on 3rd February, and placed in the Bomber Command, in No. 3 (Bomber) Group.

Thorney Island, on 3rd February, and placed in the Coastal Command, in No. 16 (Reconnaissance) Group.

Cottesmore, on 11th March, and placed in the Bomber Command, in No. 2 (Bomber) Group.

Bassingbourn, on 27th March, and placed in the Bomber Command in No. 2 (Bomber) Group.

Wittering, on 11th April, and to be transferred to the Fighter Command, in No. 12 (Fighter) Group on 16th May, when it will take over the executive command of the station.

No. 7 Armament Training Camp will form at Acklington on 1st April and be placed in the Training Command, in No. 25 (Armament) Group.

Aircraft Depot, Far East, was formed at Seletar on 3rd January.

TRANSFERS.—Air Headquarters, Iraq Command, was transferred from Hinaidi to Dhibban on 8th January.

The R.A.F. Station Headquarters at Turnhouse will cease to exist as such on

15th April, when it will be transferred within the Bomber Command to No. 6 (Auxiliary) Group.

The R.A.F. Station, Farnborough, will not be transferred to the Fighter Command as previously announced.

NEW TITLES.—The " Flying Training Squadron " at flying training schools is, in future, to be known as the " Intermediate Training Squadron."

On 1st November, 1937, the Air Armament School at Eastchurch was renamed No. 1 Air Armament School. On the same date, the units at the R.A.F. Station, North Coates Fitties, were merged into one formation to be known as No. 2 Air Armament School.

The headquarters of the Superintendent of the Reserve and Inspector of Civil Flying Training Schools was renamed No. 26 (Training) Group on 1st December.

MOVEMENTS.—The School of Naval Co-operation moved on 1st January to the R.A.F. Station, Ford, which opened on 1st December in the Coastal Command (No. 17 (Training) Group).

On 1st November, 1937, the R.A.F. Police Training Centre moved from the R.A.F. Station, Halton, to No. 1 Royal Air Force Depot, Uxbridge.

PERSONNEL.

SHORT SERVICE COMMISSIONS.—In order to facilitate the entry of candidates for Short Service Commissions in the Royal Air Force, arrangements have been made for the Selection and Medical Boards for candidates for Short Service Commissions to be held in Scotland. These Commissions are granted by selection to candidates between the ages of 17½ and 25 years who have attained at least the School Certificate standard of education. The period of service is four years in the first instance, followed by six years on the Reserve. A gratuity of £100 for each year's service after the first is awarded on transfer to the Reserve.

A limited number of short service officers are appointed annually, after competitive examination, to permanent commissions in the Royal Air Force; appointments to medium service are also offered annually to selected short service officers, inviting them to serve for a further period of five years on the active list from the termination of the active list period of their short service engagement.

R.A.F. VOLUNTEER RESERVE.—In connection with the pilot section of the Volunteer Reserve, of which the details were outlined in these Notes for August last year, further centres are now available at Cambridge and Stapleford Abbots (Essex). It has been decided in conjunction with the University Authorities that members of the University will not be accepted for training at the Cambridge centre, although they are eligible during vacations for training at other centres.

Flying training is now in operation at twenty aerodrome centres and negotiations are in progress to increase the number during this year.

LONG DISTANCE FLIGHT.

The development of long range aircraft has always been of close concern to the Air Ministry in the interests both of civil aviation and of the enhancement of mobility of units of the Royal Air Force. In 1933 a Fairey monoplane which had been specially built for the R.A.F. for long range development purposes, gained the world's long distance record with a flight of more than 5,000 miles from Cranwell, Lincs., to Walvis Bay, South-West Africa. This record has since been surpassed by other countries.

The normal evolution of aircraft design in recent years has brought about considerable increases in range and load-carrying capacity, and it has accordingly been decided to continue development work by making use of an existing type of aeroplane. The Vickers " Wellesley " has been selected for the purpose, and a flight of three aeroplanes of this type is being equipped for the investigation and development of the technique of long range flying in relation both to operational purposes and to the design of aeroplanes. Bristol " Pegasus " engines will be used with variable pitch airscrews, of Rotol Hele-Shaw design.

Wing Commander O. R. Gayford, D.F.C., A.F.C., will be in command of the unit, and it is proposed to make trial flights along the England-Australia route in the spring of 1938. It is intended that one of these flights shall be made in connection with the Sydney, N.S.W., 150th Anniversary Celebrations.

The Long Range Development Flight was formed at Upper Heyford for preliminary training on 1st January, under the command of Wing Commander O. R. Gayford, D.F.C., A.F.C., who was the senior pilot in the non-stop flight referred to above. The flight will shortly move to Cranwell where training will be continued ; extensions are being made to the existing " runway " at that station to facilitate further practice with heavily loaded aircraft.

General.

Termination of R.A.F. Displays.—After full examination of all the factors involved it has been decided to discontinue the R.A.F. Display. The Display was first held in 1920 and has been held annually since that year. The primary and main object of its original institution was to provide a culminating point for the training of squadrons stationed in this country. In addition, it was desired to afford to the public an occasion (for which fewer other opportunities then existed) for seeing something of the work and technical progress of the Royal Air Force.

A large part of the attraction of the Display has been the presentation of intricate evolutions in a comparatively confined space within clear view of all the spectators. But conditions are rapidly changing, and the advent of new aircraft of greatly increased power and speed has led to the development of new technique in training and tactics. If, therefore, the Display were to continue to serve its original purpose and to maintain a real connection with the Service training of the Air Force, its character would have to be radically altered ; the aircraft taking part would need to manœuvre over a much wider area and its attractiveness to the spectators would thus be greatly diminished. Moreover, Hendon aerodrome by reason of its size and location is unsuitable for the operation in large numbers of higher powered aircraft.

The Air Council have considered the possibility of continuing a special display of a character which would maintain the attractions with which the public are familiar ; but this would involve the diversion for a considerable time of the squadrons taking part in the display from their regular operational training in order to prepare for this special enterprise. This diversion could not be justified and in any case a display orgainzed on such a basis would become increasingly out of touch with reality.

Empire Air Day.—The position as regards opportunities other than R.A.F. Displays for the public to acquaint themselves with the work of the Royal Air Force has materially altered since such Displays were instituted. The number of Service aerodromes has greatly increased and, with the general development of transport facilities, they have become much more accessible. These changed

conditions led, in 1934, to the inauguration of an annual Empire Air Day, when large numbers of aerodromes are thrown open to the public. The attendance last year was approximately twice the number of spectators at the Display. On Empire Air Day visitors are able to see in an intimate manner the day-to-day work of the Service, including flying exercises, under conditions more favourable than it was possible to afford at Hendon. It is the intention of the Air Council to maintain and extend the scope of Empire Air Day. They trust this will compensate for the discontinuance of the Display and will result in the development of a closer public knowledge throughout the country of the work and progress of the Royal Air Force.

OVERSEAS COMMANDS

Flights.

No. 204 (G.R.) Squadron to Australia.—Five London aircraft of No. 204 (G.R.) Squadron left Mountbatten on 2nd December for Australia in order to participate in the Australian 150th Anniversary Celebrations.

The five aircraft duly reached Calcutta and left for Rangoon on the 15th, but only three arrived, one making a forced landing in the Bay of Bengal, sustaining considerable damage, and the other landing at Akyab to render assistance, if necessary. The damaged aircraft was towed to Akyab, while the other flew on to Rangoon Another London of No. 201 (G.R.) Squadron left Calshot on the 27th to replace the damaged aircraft, and joined the other four at Singapore on the 8th January.

The five aircraft left Singapore on 10th January and reached Karumba (Kimberley), North Queensland, on 18th of the month.

Withdrawal of Flying Boat Squadrons from the Mediterranean.—Nos. 209 and 210 (G.R.) Squadrons have now been withdrawn from the Anti-Piracy Patrol Scheme in the Mediterranean and have returned to their home stations.

ADEN

Subeihi Unrest.—Certain of the local tribesmen in the Aden Protectorate have seen in the increasing use of motor transport vehicles along the trade routes a loss of income to them as camel owners and breeders, and for this and other reasons there has been an outbreak of predatory raids which culminated towards the end of August in an attack on a political officer at the Wadi Ma'adin in Subeihi territory about 50 miles North-West of Aden. As the Sultan of Lahej is nominally Suzerain of the Subeihi, he was requested to take firm action to punish the culprits in accordance with the established policy of charging local rulers with the maintenance of order in their territories.

A column of the Lahej trained forces accordingly left Lahej on 13th September and arrived at Am Riga next day, their arrival being synchronized with a full squadron demonstration by aircraft of No. 8 Squadron over Am Riga and the disaffected area. The situation at Am Riga was dealt with satisfactorily and the column moved to Bir Uzia next day. Eighteen minor chiefs were summoned to answer charges against them, and by 19th September all but four had submitted. Bombing warnings were issued to these, expiring at dawn on 22nd September, by which time all but the Jaufi tribe living in a small village named Al Heija in the Wadi Ma'adin, had submitted. The village of Al Heija was accordingly subjected to air action on 22nd September, following which the column carried out a demonstration march through the area and established a post at Tor Al Baha at the junction of the Wadis Ma'buk and Ma'adin.

The opinion was expressed by the political authorities that this operation had had an excellent effect which no other method could have produced in this notoriously lawless area. By the end of September peace had been restored and the Sultan's armed forces were withdrawn with the exception of the post at Tor Al Baha.

QUTEIBI UNREST.—Early in October the Sheikh of the Ghazali section of the Quteibi tribe and one of his tribesmen were summoned to appear at Dhala to answer a charge of damaging the landing ground at As Sauda and threatening to fire on a R.A.F. aircraft which had forced landed there. The guilty parties failed to appear, and they and certain other Quteibis who had been largely responsible for their attitude were accordingly ordered to pay a fine before dawn on 18th October, failing which their villages would be subjected to air action.

On 12th October a demonstration flight was made over the area by twelve aircraft of No. 8 Squadron and nine aircraft of No. 55 Squadron, advantage being taken of the presence in Aden of the latter squadron on an inter-Command Flight from Iraq.

Notices were dropped on the villages of Al Jabha, Thumeir and Shab ad Diwan, and in the Wadis Dibsan and Dhara on 18th October warning the occupants to leave as air action would commence on the 21st. Next day, however, news was received that loyal tribesmen had evicted the Ghazali from the Wadi Dibsan and notice of air action against this area was therefore cancelled.

The fines still being unpaid on 21st October bombing commenced on that date and continued until 25th October when air action was suspended to permit the principal Sheikh of the Quteibi tribe to assemble at Am Migba before the Amir of Dhala for a conference.

The final full squadron raid carried out on the 25th October apparently created a profound impression on the offending tribes, an impression which was greatly enhanced by the fact that a salvo of bombs fell outside a cave occupied by some of the chief offenders, leading them to believe that their hiding place was known. At the Amir of Dhala's conference they were in a very chastened and conciliatory mood and made complete submission, agreeing to comply with the Government's terms and to keep the peace in future.

INDIA

TRANSPORTATION DUTIES.—The South Waziristan lines of communication remained closed to military traffic and during the period September to November a total of 125,000 lb. of supplies and 2,674 personnel were conveyed between Wana and Manzai, including the relief by air of a mountain battery at Wana on 17th November.

FLIGHTS TO CHITRAL.—Three Hart aircraft of No. 39 (B) Squadron flew to Drosh in Chitral on 15th November to convey an Army Officer and an injured sepoy to Peshawar. A tribal territory reconnaissance of the Northern Area was carried out at the same time.

IRAQ

LIAISON FLIGHT TO SYRIA.—On 13th September a flight of four aircraft of No. 30 Squadron carried out a training and liaison flight to Syria, returning on 19th September. The French aerodromes at Rayak, Damascus, Aleppo and Deir Ez Zor and a landing ground at the oases outpost of Ain Arus near the Turkish Frontier were visited.

MIDDLE EAST.

UNREST IN TANGANYIKA.—On 17th September about two thousand Wachagga—a tribe living on the southern slopes of Mount Kilimanjaro, assembled at Machame and destroyed various buildings in which coffee was stored. Rioting also occurred at Meringo. The Wachagga are a coffee producing community and objected to the sale of their coffee being effected through the Government controlled selling organization. On 18th September the Provincial Commissioner, Northern Provinces, asked for assistance by R.A.F. aircraft through the Acting Governor of Tanganyika. Two aircraft of No. 223 Squadron left Nairobi for Moshi where they arrived within a few hours of the request being received. On arrival the Provincial Commissioner asked for demonstration flights to be carried out over the affected areas and several were carried out the same day over the Meringo and Machame districts. About seventy arrests were made on the 18th and 19th September, and on 20th September reports were received that rioting had ceased. The Provincial Commissioner asked for a further demonstration over Machame on the evening of 20th September as arrests were still proceeding in that area. On 21st September the situation was declared more or less normal, and the aircraft returned to Nairobi.

No bombs were dropped and no rounds fired from the air, the demonstration flights consisting of low flights over crowds at various places where they were assembled.

PALESTINE

ESCORT OF POTASH CONVOYS.—The Potash Convoy which runs between the Dead Sea and Jerusalem was attacked on 22nd October and at the request of the Officer Administering the Government aircraft of No. 14 Squadron provided an armed air escort to the Company's road convoys at irregular intervals.

FOREIGN

DENMARK

AIR RAID DEFENCE MEASURES.—At a recent lecture given before the Air Protection Society it was said that evacuation was more suited to Danish psychology than gas masks, and that plans are being formulated for the evacuation of between 150,000 and 200,000 people from Copenhagen in an emergency.

FRANCE

RETIREMENT OF GENERAL DENAIN.—General Denain, the Inspector-General of Overseas Air Forces, Commander of the 5th Air Region (North Africa), and former Air Minister, retired on 6th November, 1937, on attaining the age of fifty-seven years.

After a brilliant flying career during the War, in the course of which he was in command of all the air forces at Salonica and later in command of the air forces in the Levant, General Denain, then a Brigadier, spent two years in Poland at the head of the French Military Mission. When M. Pierre Cot took office as Air Minister for the first time in 1933, General Denain was appointed Chief of the General Staff of the French Air Force, and he held this position until the fall of M. Cot after the Stavisky riots of February, 1934. In the Doumergue Cabinet, which then took office, General Denain, while still remaining on the Air Force active list, became Air Minister. During his two years as Air Minister, until the fall of the Laval Ministry in January, 1936, General Denain initiated the air force re-equipment

programme, which was designed to ensure the air force a first line strength of 1,000 modern aircraft, 200 of which were to be replaced annually.

On handing over his portfolio to M. Marcel Deat in January, 1936, General Denain was appointed Inspector-General of Overseas Air Forces and Commander of the 5th Air Region (North Africa).

LONG DISTANCE FLIGHTS.—Nine detachments participated in long-distance formation flights, the majority of which left Istres on 9th November, 1937, and having crossed the Mediterranean, pursued the following itineraries.

Detachment " A," composed of eighteen Bloch 200 aircraft, and detachment " B," composed of nine Amiot 143 aircraft, flew to Blida (Algeria) and Tunis respectively. Later, the two detachments met at Blida and continued their flights, detachment " A " going via Casablanca to Dakar and detachment " B " via Gao and Niamey to Konakry. They remained at their destination for a few days in order to carry out combined exercises, and the round trips were concluded, by detachment " A " proceeding to Tunis and detachment " B " returning to Istres.

Detachments " C " and " D," composed of eighteen Potez 540 and nine Farman F.222, after leaving Istres, proceeded via Bastia to Tunis el Aouina. They subsequently flew to Southern Tunisia where they carried out exercises.

Detachments " E " and " H," comprising five Farman 222's, proceeded to Indo China via Tunis el Aouina, Benghazi, Cairo and Damascus.

Detachment " F," composed of three Amiot 143 left Istres for a long distance flight to Madagascar via Tunis, Blida, Gao, Fort Lamy, Broken Hill and Mozambique to Antananarivo-Ivato, and returned to France by the same route.

Detachment " G," comprising five Bloch 200 proceeded to Damascus following the same route as detachments " E " and " H."

Detachment " J "—two Bloch 200—flew to North Africa independently to take part in the exercises.

In addition to the above, about twenty single-seater fighter Dewoitine 500 were transported to Tunis in the seaplane carrier " Commandant Teste," whilst ten Bomber aircraft, Leo 206, proceeded direct to Morocco.

The aircraft which were engaged in these flights returned to France after covering a distance of 372,900 miles. The President of the Republic and the Air Minister were among those who attended a reception given to the Officers and other ranks. The Air Minister in a speech said that France could safeguard strategic rights indispensable to her, and had demonstrated in Africa and the Colonies the strength and mobility of the French Air Force. It is now known, he added, that squadrons of great offensive capacity can be sent from Europe to Africa in a few hours.

GERMANY

SPEED RECORD.—The official announcement of the F.A.I. reveals the fact that the German aeroplane which recently broke the land-plane speed record at 379 m.p.h. was not a Messerschmitt Bf.109, which is the new standard fighter of the German Air Force, but a Bf.113R. Nothing is known of this type, but it is presumed to be a development of the Bf.109, probably designed expressly for racing purposes.

ITALY

SPECIAL FLIGHTS.—According to the official Italian communiques the following records were carried out in November and December :—

Two new speed records over distances of 100 and 1,000 kilometres (62 and 620 miles) were established by an Italian pilot who averaged 554 and 524 kilometres

(334 and 326 miles) an hour respectively in a Breda 88 light bomber equipped with two Piaggio engines.

A new speed record with loads of 500, 1,000, and 2,000 kilogrammes (1,102, 2,204, 4,408 lbs.) was set up over a course of 1,000 kilometres by attaining an average speed of 430 kilometres (267 miles per hour) over the whole course. (Shortly afterwards a German pilot claimed to have surpassed the records for the loads of 500 and 1,000 kilogrammes).

It is stated that weather conditions were not at the best and towards the end of the flight the aircraft had to fly low, and owing to this there was a decrease in speed. The type of aircraft used for this flight was an S.79 fitted with three Piaggio P.II.R.C.40 type engines (developing 1,000 horse-power each at normal height).

A seaplane record was gained by climbing to an altitude of 8,951 metres (29,365 feet) with a load of 2,000 kilogrammes (4,408 lbs.); later, a height of 7,410 metres with a load of 5,000 kilogrammes (11,025 lbs.) was obtained, thus setting a further record. The aircraft used on these records was the Cant Z.506.B fitted with three Alfa Romeo engines, type 127, R.C.55, of 700 horse-power each.

PETROL SHORTAGE.—The recent reported shortage of petrol amongst various petrol distributing firms appears now to have been partially overcome, and although reserve stocks are still said to be below the level required by regulations, licences have been granted by Government to bring these stocks up to the minimum laid down.

The exchange authorities, however, obliged as they are to exercise the most rigid economy in the issue of licences over the whole field of imports, are known to be watching the petrol situation with particular care. They are prepared if necessary to reduce even the present rate of consumption by raising the sales tax and consequently the retail price. The oil distributing companies, after joint consultation, have submitted to the authorities their estimate of the country's requirements in petroleum products for the year 1938 as amounting to about £15,000,000, not including naval bunkers. This estimate is still under consideration in the Ministries of Corporations and Finance. It is said that during 1937, licences were issued during 1937 to a total value of only about £8,000,000. It is as a result of this severe restriction that the companies were obliged during the summer to cut into their own commercial stocks and even into the reserve stocks which they are required to hold at the orders of the Government.

It is also reported that the hope to have the full petrol requirements refined in the country by the end of 1937 is far from being fulfilled. Petrol will not be on the market from the Bari plant before the latter part of 1938 or from the Leghorn plant before the end of 1939.

JAPAN

SINO-JAPANESE HOSTILITIES.—A feature of the Sino-Japanese hostilities in China has been the extensive use made by Japan of her naval and army air services.

In North China the rapid advances made by the Japanese were greatly assisted by the constant bombing of Chinese communications and troop concentrations.

In Central China, the Chinese have been subjected to constant and heavy air attacks since the start of hostilities. During the retreat from the Shanghai district towards Nanking and Wuhu, there is good reason to believe that the Chinese lines of communication were almost completely disorganized as the result of air attacks.

In South China, the Japanese seem to have directed their air attacks on to the Kowloon-Canton and Canton-Hankow railways, with the object of preventing the flow of munitions along these lines to the main Chinese armies in Central China.

The Chinese Air Force has shown very little activity during the past three months, and is presumably short of aircraft. Having practically no aircraft industry of her own, she is dependent on foreign supplies of aircraft and spare parts.

SOVIET UNION

SOVIET AIR DISPLAY.—An Air Display was recently held at Moscow on the occasion of the Annual Day of Soviet Aviation. The first part of the programme was devoted to the exhibition of new type civil aircraft, and the second half to military flying which included, for the first time, inverted formation flying. This was followed by a formation of five I.16 fighters doing aerobatics, consisting mainly of loops and flick-rolls. These aircraft frequently performed flick-rolls of three turns which demonstrated the strength and general manœuvrability of this type of fighter. Two T.B.6s, the new type four-engined bomber, took part in the fly-past. These aircraft were stated to look very impressive with their clean modern lines and retractable undercarriages. The Display ended with a fly-past of three Soviet airships. The quality of the flying and the general organization were most creditable, and by common assent, were an improvement on the displays of the previous years.

RECORD FLIGHT BY AIRSHIP.—The Soviet airship V.6 landed at Moscow on 4th October, after having remained in the air for 130 hours, which is claimed to be a duration record for an airship. During this time, the airship, which had originally taken off from Moscow, is reported to have covered over 3,000 miles. The V.6 which made its first flight in 1935, is of the semi-rigid type with a cubic foot capacity of 718,000. It has three engines of 250 h.p. (type unknown), and a cruising speed of about 70 miles per hour. It can carry thirty-two persons, including the crew.

UNITED STATES

PACIFIC ISLAND AIR BASES.—In connection with America's defence plans in the Pacific, Congress recently approved the expenditure of £400,000 on improving and extending the facilities at Midway and Wake Islands which until now have been referred to as stops on the new commercial air route from America to China. Channels 200 ft. wide and 18 ft. deep are to be blasted from the open sea into the great lagoons at Midway and Wake, thereby providing anchorage for at least a hundred flying boats at each island. The channels, too, will admit the necessary aircraft tenders.

AIR BASES IN ALASKA.—It is reported that naval and air bases will be established at Unalaska in the Aleutian Islands, and on Woody Island, Kodiac, in the Alaskan Gulf. The Aleutian Islands are America's outpost in the North Pacific, midway between the coast of Alaska and Japan's outer islands.

It is also reported that six naval aircraft are to be based temporarily at Sitka, Alaska, during the winter to test winter operating conditions.

PRODUCTION OF 100-OCTANE FUEL.—It has been reported that over 18,000,000 gallons of super-grade fuel is being purchased by the Government for the use of military aircraft next year. American scientists consider that the use of these new fuels will increase the performance of aircraft by 30 per cent.; for example, bombing planes that now carry 2,000 lbs. of bombs will be able to carry 3,000 lbs. with the new 100-octane fuel; again, if the engines of the China Clipper were designed to take 100-octane fuel the increased pay load would, it is stated, be worth 4,000 dollars on the return trip between America and Honolulu.

It is further explained that iso-octane is a synthetic fuel with better burning characteristics than any natural spirit. This slower burning quality enables much higher compression ratios to be used than would otherwise be possible.

REVIEWS OF BOOKS

GENERAL

Under the Pole Star. By A. R. Glen. (Methuen.) 25s.

With the great improvement in communication it may be that some of the isolation experienced by earlier explorers in the Polar regions has been somewhat eased. It may be that with the research into food values and better equipment some of the hardships have been alleviated. The dangers may diminish, but the fascination remains, and modern appliances have but added to the possibilities of more intensive research into scientific problems, the results of which must be of use and value to the world.

Mr. Glen, at the age of twenty-three, already had a considerable experience of Polar travel. On this scientific expedition to North East Land, lasting some fifteen months, he led a party of ten whose average age, not counting a Norwegian trapper, was twenty-three. It included his able second in command Mr. Croft, three surveyors, two physicists, a biologist, a wireless operator and expert who combined research on the ionosphere with his other duties, and the trapper.

The book under review has the attractive title of " Under the Pole Star." Written by Mr. Glen himself, beautifully illustrated by photographs mainly taken by Mr. Andrew Croft and finely produced by Messrs. Methuen, it is not only a distinct contribution to Polar exploration, but in addition a most readable volume. Mr. Glen's pen when describing the journeys and work of the expedition is as easy as, it is evident, was his nature when dealing with his fellow travellers and—most important—those from whom he asked and obtained help before starting.

Mr. Glen did not go without reason to North East Land. While laying no claim whatever to agricultural possibilities, he does bear in mind mineral ores. His mention in the first chapter of Igarka and Mr. Smolka's book on the neighbouring regions shows how his mind is moving, and being, as he fortunately is, untramelled by convention, his researches into all matters—meteorological stations, radio communications, and others—are useful and stimulating. He, like Gino Watkins, is prepared to explode some conventions: he holds that it is just as possible for an Englishman to drive dogs or become a hunter as it is for an Eskimo or even a Norwegian to do so; he points out that there is no necessity to carry the same food for a boat journey where seals and other resources are plentiful as on a sledge journey where they are not—this may seem obvious, but it is not always realized, and it is only mentioned as one of the many things which shows his freedom of mind.

As an example of the change from the complete isolation of the past brought about by modern appliances, this party was able to receive news and discuss it, and discuss it they did with zest and freedom. After one such discussion, the party despatched a message to Rome on the subject of Abyssinia which said, " . . . We, the inhabitants of North East Land having in mind General Nobile and his gallant comrades Zappi and Mariano, advise conciliation." He shows his sense of proportion by adding " we often wondered which of the underlings of the Palazzo Venizia finally relegated it to the waster-paper basket."

The recommendations on food and equipment are admirable, and Mr. Glen has the good sense to include in his book a business-like statement of expenditure.

England and the Maori Wars. By A. J. Harrop. (The New Zealand News. London). 15s.

Colonial questions are very much in the forefront at the present time and the problem of the transfer of the native territories in South Africa from the administration of the British Government to that of the Union of South Africa has lately been prominently before the public. A study of the Maori wars (1860–72) throws a vivid light on such questions and on the practical working of theories of Imperial defence and colonial self-government, which have changed the whole character of the British Empire.

When the English missionaries, headed by Samuel Marsden, landed in New Zealand in 1814, they could hardly have foreseen that they would prove to be the pioneers of a development which, within a comparatively short space of time, would add a new Dominion to what is now known as the British Commonwealth of Nations. But the faltering steps by which the British Government advanced toward the goal of annexation provide, in themselves, a complete refutation of the fashionable slogan of " colonial greed."

Captain Cook first claimed the island for Great Britain in 1779, but his actions were disavowed by the Government, which rejected the new responsibilities. French colonial ambitions, however, gradually forced a more constructive policy on the attention of British statesmen, who, in 1840, authorized Captain Hobson, R.N.—Lieutenant-Governor designate, to hoist the Union Jack in the Bay of Islands. At the price of guaranteeing to the tribes by treaty the free possession of their lands and fisheries, Captain Hobson had little difficulty in inducing the bulk of the Maori chiefs to accept the Queen's sovereignty. The native rights thus rested on a firm legal basis.

In connection with the South African problem, the Secretary of State for the Dominions has emphasized that before any transfer of native territories can take place, the wishes of the inhabitants must receive full consideration. This admirable precept, however, was not followed in the case of the Maoris when the British Government, in order to secure the withdrawal of the Imperial troops, handed over the control of the tribes to the Government of New Zealand. The precedent thus set is unlikely to be overlooked when the account with the Union of South Africa comes up for final revision.

British War Missions to the United States (1914-1918). By Colonel W. G. Lyddon, C.M.G. (Oxford University Press). 10s. 6d.

This is a somewhat belated work, full of faint echoes of a stupendous muddle. Colonel Lyddon—like our bewildered Foreign Minister of that day, Arthur Balfour—saw things from the outside as a " Missioner." He seems not to have read the four-volume *Intimate Papers* of Edward M. House, who was President Wilson's sole " toter " and (self-styled) " manager." That Texan " Colonel's " revelations—he shed his title at the Kaiser's table—are truly staggering.

These War Missions dealt with all things, from aircraft supplies to " thought-control," and from shipping to gas warfare. Here these strayed ghosts flit before us—joyously, or anxiously, according as they were Americans or visitors: Lord Rhondda, Pierpont Morgan, Spring-Rice, Viviani, Joffre, Pershing, and Haig. Colonel Lyddon opens with elementary geography of the United States and its pious

" neutrality " up to and beyond 1916 when Wilson was re-elected on the slogan, " He kept us out of War ! " But who would believe from the author's bald summaries that the Allies were almost at their wits' end in 1917–18 ? Certainly, Wilson could promise " man-power " up to ten millions ; lesser leaders urged : " Let us at least lend our money and labour to realize the President's dream of a world made safe for Democracy ! " Yet France was soon bidding against Britain ; and later on, America's own army was competing with her navy for supplies !

" Balfour's Mission," Colonel Lyddon tells us, " found the President an isolated figure, extremely sensitive to the possible charge that he was acting under the influence of a foreign Power." He was " almost unapproachable by any of the Ambassadors." Even our Foreign Secretary could only see the haggard man four times at the White House ; and at each interview neither could make head or tail of the other !

The author notes the American conception of " a British gentleman :" he was a " Haw Damme sort of person, full of side, autocratic and wanting in human sympathy." What he does *not* tell us is the growing dismay of cocksure Lord Northcliffe (" I've known these Americans for thirty years ! "), and how much better Lord Reading handled them. Allied money fairly swamped a sub-continent as big as Europe. Contracts placed in January, 1915, at less than £15,000,000 had in a year leaped to over £400,000,000. " We're hurling it out like drunken sailors " groaned Wilson's Treasurer.

It is impossible to picture the tragi-comic confusion—though the author lifts the lid here and there very naïvely. One American critic grew voluble over " unnecessary strictness of inspection." " You remember all I said ? " he fired off after a brief absence. " Well, I take it all back—I've been to Washington ! " To this, Colonel Lyddon adds mildly : " The rest is unprintable ! " In artillery models the U.S. chiefs favoured the *soixante-quinze* rather than the 18-pr. field-gun ; the Browning came before the Lewis, and the .300 rifle was preferred to the .303. Jigs and gauges were a puzzle, owing to the few firms able to guarantee extreme accuracy. For 3,000 miles the uproar raged—while Sir Hartman Lever could draw a cheque on the British account at Morgan's for $200,000,000 in favour of the Wheat Export concern. Then comes 1918, with Haig's " backs to the wall " ; and urgent appeals are cabled for barbed-wire, high explosives and huge mechanical trench-diggers. Socially, America was very kind, with motor-cycle police in the cities clearing a way for the War-Missioner. He " might have been a Prince—or a fire-engine ! "

It is a pity that our author did not read Colonel House's work, written from the " inside." Then he would have seen the veil lifted upon a very " mixed " polity of 130,000,000 people ; and as a soldier, he might well have wondered how they would fare in the Day of Wrath which angry Japanese foretell for them.

One last anecdote from our author : a British Inspector shows a picture of a burst gun to a U.S. works-manager : " That's why we want silicon. And don't forget that a burst gun usually means four men killed and six injured. Think of that when you give us low silicon steel." The rattled manager retorted : " Will you give me your word of honour that this photograph is really that of a burst gun, *and not a pile of junk put together for effect ?* " The italics are the reviewer's.

Der Bündniskrieg. (The Coalition War). By General der Infanterie Wetzell. (Mittler & Sohn, Berlin). Price 1 R.M.

In this small work, General Wetzell—the well-known German strategist of the Great War, clearly explains the circumstances which called into existence the

" Schlieffen Plan " for the invasion of France ; next he examines the reasons for its failure ; lastly he puts forward as an alternative to the plan a scheme which he considers would have met the altered situation of 1914.

It is this joint consideration of the political and strategic factors governing the opening phase of the Great War which is the best part of the book ; and it seems to be based on a very careful estimation of probabilities. Taking his premises from the necessities and limitations of a " Coalition War," General Wetzell argues that any such war, both in the past and in the future, must be regarded from the standpoint of the Allied side as a whole, and not from the point of view of a single partner of an alliance. The latter certainly applies in the case of France and Britain in 1914, when British interests were, in fact, subordinated to those of our Ally. A similar situation had already arisen on the Eastern Front where Austro-Hungary plunged straight into an offensive against Russia without taking sufficiently into account the action of Germany. The complete victory of Tannenberg only just saved the situation in that theatre of the War.

The book falls into five sections. The first deals with the period ending with the fall of Bismarck, during which that statesman, working in conjunction with Moltke, made it his aim to avoid creating any situation which might cause Germany to be involved in a war simultaneously with Russia and France. The second section shows how the Schlieffen Plan came into being in 1905 at a moment when the Russian military organization had been gravely crippled by the Russo-Japanese War. At that moment the plan was wholly justified by circumstances. But from 1909 onwards the situation, as the author shows in Section III, began to change as the result of the Franco-Russian Alliance and the consequent vast improvement in the Russian capacity for a rapid mobilization. At the same moment the Austrians were adopting a strongly aggressive plan of campaign, which greatly complicated the position of the Central Powers in the East : they would now be faced with an offensive on two fronts. Wetzell is convinced that the course of the Eastern operations could have been turned greatly to the advantage of the Central Powers if those two States had concerted their action and embarked on a more rational plan for the defeat of Russia. In that event, as he shows in Section IV, the German role in the West should have been wholly " strategic defensive," as Moltke the elder had outlined in 1871 and repeatedly recommended in the event of a war on two fronts. The discussion of the German strategy to meet this case is most interesting. The French, as Wetzell justly remarks, might easily have run their heads against a brick wall, whilst the violation of Belgian neutrality might have been avoided. Would Britain then have declared war ?

The final section deals with " Coalition War " in general ; it ends with the wise conclusion that any future European War will partake of this nature : consequently the political and military objects of any Alliance need to be studied as one whole, and with care, before hostilities begin.

The March of a Nation. By Harold G. Cardozo. (Eyre & Spottiswoode). 10s. 6d.

No event in modern European history has called forth such a spate of literature and invective as the Spanish Civil War. Brother has been set against brother by this event not only in Spain but outside it, and amongst writers no less than the general public the tendency towards violent opinion has been very noticeable. But Mr. Cardozo, though a supporter of General Franco, does not allow himself to be carried away by any personal antipathy to socialism or communism. His book

is an interesting straightforward account of experiences on the various fronts during a year and a half of civil war.

In order to understand the war one should know what led up to it, and the author quite rightly devotes part of his first chapter to explaining this. He reiterates what cannot be too often stressed, that the so-called Popular Front government of February, 1936, did not represent a majority in the country. The Right and Centre parties polled 500,000 more votes than their opponents, yet owing to the " packing " of the Commission for the verification of mandates they were allotted forty fewer seats.

The author deals adequately with the fighting round Madrid, and the reasons why the Nationalists failed to take it at the end of 1936. In doing so he brings out the point so constantly laboured by writers on strategy, namely, the influence which public opinion often exerts upon the commander in the field.

There are some interesting observations on modern war methods. Referring to the advance of General Varelas' columns up the Tagus valley towards Madrid, Mr. Cardozo says: " Throughout the war, none of these men were ever called upon to march a mile, except when actively engaged in fighting. They were carried in motor lorries and motor omnibuses right up to the limit of effective machine-gun range, and then and then only they began to move forward on foot. The result was that the units were kept in a much fresher state than would have otherwise been the case." Conversely he points out how the same means of transport tends to produce a demoralizing effect when employed by untrained troops, who, when pressed in attack, invariably make for the roads to regain their lorries, whereas they could have avoided casualties by retiring straight across country on foot. He attributes the Nationalist failure at Guadalajara to be partly due to a lack of " road discipline " in connection with their lorry convoys.

In talking of weapons, Mr. Cardozo describes the machine gun as having proved once again that she is " queen of the battlefield," but it should be borne in mind that both sides are poorly equipped with artillery and have very few Medium, as distinct from Light, tanks.

There is an important last chapter entitled " The future of Spain," in which the writer puts his finger on some of those psychological factors in the Spaniard's make-up which are so different from those of other Europeans as to compel their leaders, not to mention foreign prophets, to tread both the present and the future with great wariness.

Krupp or the Lords of Essen. By Bernhard Menne. (William Hodge & Co., Ltd). 12s. 6d.

Although this book is obviously written with political bias, it contains much of interest to Service readers.

" In 1608," Herr Menne says, " there were twenty-four gunsmiths and dealers engaged in the fire-arms trade, in 1620 there were already fifty-four. The site of Essende between the two contending parties "—of the Thirty Years' War—" allowed it to do good business. . . . Anton Krupp threw all his energy into the industry of war—he was the first of the House of Krupp to do so. His turnover reached one thousand barrels—quite a good proportion of the total annual output of some fifteen thousand." But this was nothing to the proportion his descendants were to achieve !

In 1862 King William of Prussia made his famous " blood and iron " speech.

The " iron," he decided, should be Alfred Krupp's new cast-steel guns. The King wrote that he placed this order " in recognition . . . of his, Krupp's, sacrifice of the profits which he might have derived from the sale of guns to foreign countries " : he had not been allowed to find out that France, England, Russia, the Netherlands, and Egypt were already among Krupp's customers. When six more countries quickly followed suit, Krupp became known as " the ordnance king."

The victory of Prussia in 1871 followed as a splendid advertisement for Essen guns ; and by 1873 the annual output exceeded the war output by some two thousand pieces. The Essen works then employed 16,000 hands.

By 1st July, 1914, 80,000 hands were employed ; and " the total sales of guns up to the end of the previous year amounted to 24,000 to the German Government, and 26,000 to fifty-two foreign countries, twenty-three of these being in Europe, eighteen in America, six in Asia, and five in Africa." Krupp's profits out of the Great War have been reckoned as low as 226 and as high as 800 millions of marks.

This book can be recommended as a readable account of the greatest weapon-makers the world has yet known.

Hints to Travellers. Vol. II. Edited by the Secretary, Royal Geographical Society and published by the Society. 14s.

Although this is the eleventh edition of this Volume, the contents and make-up are almost completely new.

Volume I, which appeared earlier, continues to be devoted to Survey and Field Astronomy and therefore caters more for the specialist. Volume II, however, contains much of interest and value to a wide circle of readers in all three Services, and it can be particularly recommended to officers who may find themselves on detached duty, whether in command of a landing party, an outpost, or a long-distance flight. Chapters on Transport, Water Supply, Boats, Camp Routine, Health and Disease, and Injuries, may provide just that vital knowledge of " what to do " which makes the true leader in emergency. Other chapters, which if perhaps not of direct Service application, may nevertheless be read with interest, are those on anthropology, geology, and photography ; one on meteorology is specially commended to naval and air force officers.

The editor of this excellent handbook makes his acknowledgements to the " many travellers " who have assisted him. The fact that their names are appended to very many of the " hints " and much of the " advice born of experience " adds to its interest and authority.

NAVAL

Jane's Fighting Ships—1937. Edited by F. E. McMurtrie, A.I.N.A. (Sampson Low, Marston and Co.). £2 . 2 . 0.

Forty years ago Mr. Fred T. Jane published the first volume of the Annual which still bears his name. Its continued existence is the highest tribute to the founder's enterprise and foresight. The Foreword to this year's volume reminds us how navies have changed during that period by recording the fact that only twenty-eight of the ships described in the first *Fighting Ships* are still to be found in its pages.

At a time when the world is seething with unrest, a close study of foreign navies

and a comparison with our own fleet is a matter of vital concern to everybody who desires to have a true perspective of our international position and relations. Within the past year it has become increasingly clear that we depend more than ever on sea power for our imperial security and for our influence to preserve peace. Sea power is the direct product of fighting ships—their efficiency and their numbers, and in so far as efficiency relates to design, there is no better authority than " Jane " to which to apply for details.

In some cases announcements of new construction have been made so recently or particulars have been kept so secret that it is only possible for the compiler to provide the barest outlines ; but it is far better that he should err on the side of caution than that he should risk misleading by indulging in " intelligent anticipation."

The general trend of battleship design is becoming apparent with the publication of fuller details of the new French, German and Italian ships. The plan of the U.S. ships is given with some necessary reserve, but it is probably not very wide of the mark. The Japanese, like the Russians, are true orientals in their love of secrecy, and nothing definite is known of their future battleships ; but the repeated suggestions that they intend building huge vessels of 46,000 tons or more, do not seem to take into account such practical matters as draught, beam, harbours and docks, which are wont to impose limitations.

Speaking generally, there is good reason to believe that British men-of-war are the most seaworthy and Japanese the least, in the navies of the great Powers. This would certainly be the impression made on the seamen's eye by the photographs of the respective types in the Annual.

A useful feature to be found in the case of some of the principal Powers, is a " Summary of Naval Forces," giving the numbers of each class " built" and " building " in a readily accessible form. This might with advantage be extended to cover all navies of any real importance. The Publisher asks for comments on a proposal to group all silhouettes together at the end of the book. We are in favour of this change, but instead of the suggested classification in geographical order of countries, we would prefer classification by classes—battleships, carriers, cruisers, etc., on the lines adopted in that companion Annual, *Brassey*.

Our only criticism of this always admirable publication, is that *all* " plan " and " elevation " diagrams should be to the same scale, preferably 100 ft. to the inch. If, in exceptional cases, this is not possible, then the scale should be given. The matter is specially important to the increasing number of keen model makers.

For the rest we have nothing but praise for this new volume. It will remain an invaluable reference book of current interest until, in a year's time it follows its thirty-nine predecessors into our archives as a scarcely less valuable historical record.

The King's Ships through the Ages. By Rowland Langmaid. (W. H. Barrell, Ltd., Portsmouth). Price 21s.

Lieutenant-Commander Langmaid can be most heartily congratulated on this beautiful little volume—reproductions of his own watercolours. It gives us types of the King's ships from the reign of King Alfred to that of King George VI, and the accompanying letterpress provides a thumb-nail history of the British warship through its various stages of development.

The pictures themselves are delightful; they combine the touch of the real seaman and naval officer with the skill of an excellent artist. Whether it be as a book of reference in a big library like ours or as one of a necessarily very limited number of picture books on the cabin shelf, this most pleasing and artistic little work cannot fail to be acceptable.

MILITARY

The Royal Engineers in Egypt and the Sudan. By Lieut.-Colonel E. W. C. Sandes, D.S.O., M.C. (The Institution of Royal Engineers). 18s.

British military history has few more interesting periods than that of the development of Egypt and the Sudan. Both these countries owe much to the successful employment of British troops, and in the process of developing them the Corps of Royal Engineers may justly claim to have played a leading part. The names of Gordon and Kitchener stand out above all, but there were in addition a large number of distinguished Royal Engineers whose reputations were begun in the Egyptian and Sudanese campaigns. The Nile campaigns, carried out under conditions which differed widely from the usual little wars which attracted the best of the Victorian soldiers, still afford most valuable lessons for the formation of military character. No keen subaltern willingly missed the chance of serving with the Egyptian Army of those days, and no keen student of military history to-day would leave out the study of the Egyptian and Sudanese campaigns of 1882 to 1898.

Lieut.-Colonel Sandes' new book is in every way worthy of the period which it covers. It has all the attributes of good military history. It is written in the clearest style. It not only describes the work of all the Royal Engineer officers who bore a prominent part in the development of Egypt and the Sudan, but it connects them with a general account of their campaigns and brings out the whole story in an exceptionally interesting manner. The author's researches have been extremely thorough; his footnotes on every page refer to the works he has consulted, and these alone show the infinite variety of his background. He has visited the battle-fields he describes; he gives us photographs of the scenes as they appear to-day, and he provides numerous maps—drawn by himself—which have the rare merit of showing every place named in the text. It is not too much to say that this is an ideal book of military history.

Although written primarily as a history of the services of Royal Engineer officers and units, the book gives due proportion to the other prominent soldiers, and thus keeps the perspective in sight. Beginning with an account of the first British campaign in Egypt in 1801 under Sir Ralph Abercromby, the author passes on to Wolseley's campaign of 1882, the rise of the Mahdi, the operations on the Red Sea Littoral, and the somewhat unsuccessful attempts to defeat Osman Digna from the Suakin side. The Nile Expedition of 1884–85 to relieve Gordon, and Kitchener's campaigns of 1896–98, naturally occupy the principal places in the narrative, but Colonel Sandes also gives a careful review of all the work done in preparation for them.

The failure to save Gordon and the withdrawal of the forces encouraged the Dervishes to advance and destroy the line and posts established by Lord Wolseley. The Egyptian frontier retired to Wadi Halfa. Some salutary lessons, however, were inflicted on the raiders before peace was restored. The re-conquest of the Sudan had to be deferred until Kitchener, who succeeded Grenfell as Sirdar in April, 1892, could make his preparations, and as Egypt's resources were very limited, such labours could only proceed slowly. But how thorough they were! Kitchener's

models of economy and organization are described with much detail, and the author shows clearly how much the brilliant final success was due to the Sirdar's forethought. The story has often been told, but never better than Colonel Sandes tells it.

The operations in the Great War are necessarily only briefly described, but interesting sidelights are included. In various operations in the Sudan since the War, a number of Royal Engineers have played important parts.

In the second part of his history, Colonel Sandes deals with the civil engineering carried out by Royal Engineers. Chapters on Irrigation, Railways, Telegraphs, Survey and Exploration, Works and Buildings, Archæology and Geology, and finally on Administration tell a wonderful tale of development, the fruits of which are seen to-day in every part of Egypt and the Sudan. The rebuilding of Khartoum and Captain Kennedy's construction of Port Sudan are perhaps the most striking examples of the work dealt with in this part of the book.

In so brief a review it is impossible to make more than these slight references to the contents of so absorbing a book. The production of the volume, the copious footnotes, and the ample index are alike excellent.

REGIMENTAL HISTORY

History of the 19th King George's Own Lancers, 1858-1921. By General Sir H. Hudson, G.C.B. (Gale & Polden).

The story of two Regiments, the 18th King George's Own Lancers and the 19th Lancers (Fane's Horse), amalgamated in 1921 under the title 19th King George's Own Lancers, is chronicled in this volume. In his Foreword, Brevet-Colonel the Lord Wigram—Colonel of the Regiment—emphasizes how similarly the two Regiments, from birth until their union, have lived, moved and had their being and stresses the spirit of comradeship which happily graces the combined Regiment. A well-deserved tribute is paid to the author and to his assistants for producing a very cleverly and amusingly interwoven story. Of many anecdotes, one will certainly bear repetition.

During the action at Ahmed Khel on 19th April, 1880, when the 19th Lancers (Fane's Horse) charged the Afghans, their Adjutant, Lieutenant E. A. Young, who was engaged to a lady in England, had his horse shot under him and suffered no less than thirteen wounds. Fearing that he might become a cripple for life, Lieutenant Young wired from hospital to his fiancée, offering to release her, but received the heartening reply that she " would marry the bits."

During the Great War, 1914–1918, both Regiments served first in France and subsequently in Lord Allenby's victorious campaign in Palestine. The 2nd Battalion, Grenadier Guards and the 18th King George's Own Lancers fought side by side at Cambrai, where they retook Gauche Wood from the Germans after a desperate counter-attack. In commemoration of their heroic conduct, the Grenadiers honoured the 18th Lancers with the presentation of a silver bugle, inscribed " From the 2nd Battalion, Grenadier Guards to the 18th Lancers—Gauche Wood, December 1st, 1917." This bugle is kept in the Officer's Mess as a treasured memento.

Both Regiments took part in the pursuit of the beaten Turks after the battle of Megiddo—the longest pursuit recorded in military history since Murat's in 1806 after the battle of Jena. After riding nearly 500 miles in just under six weeks and

assisting in the capture of 11,000 Turks and 52 guns, the 18th Lancers reached Haritan, 12 miles North of Aleppo on 27th October, 1918, three days before the signature of the Armistice with Turkey.

AIR

Jane's All the World's Aircraft, 1937. Compiled and edited by C. G. Grey and Leonard Bridgman. (Sampson Low, Marston and Co.). £2 2s.

Now in its 27th year of issue, this invaluable volume is divided into the following sections: Preface, International Records, International Markings, Civil Aviation, Service Aviation, Aeroplanes, Engines and Airships.

The preface provides, year by year, a capable summing up of the tendencies and developments of the preceding twelve months. This year the outstanding feature has been the rearmament of the great Powers, including even the United States despite a policy of isolation. It is interesting to notice the production policy to which various nations pin their faith. Great Britain and America allow the fullest freedom to the manufacturers of aircraft and engines, although in both countries factories may be regarded as State-aided; it is said that even in Germany factories are not actually run by the State, the directors being allowed a free hand, though it would doubtless not be disputed that State subsidies form a very much higher proportion of the income than in most other countries. France on the other hand has nationalised her aircraft industry, and it remains to be seen whether this will result in greater or less output.

International records for the various types of aircraft fill one page; in each class they consist of distance in a straight line, speed either absolute or over stated distances, and height. It is disappointing to note that of twenty-one records, Great Britain holds only one, the height record for land aeroplanes. Of the remainder, America holds seven, France five and Italy four.

The section devoted to Civil Aviation is more complete than ever and lavishly illustrated. In one respect only can it be criticised: in previous issues there was a higher proportion of maps of air lines; and if, for example, a map of the Italian air lines had been provided it would show the astonishing growth of Italian air transport over Southern Europe and Northern Africa.

The section covering Service Aviation has always been rather brief, as the Editors must depend largely upon details supplied to them by the officials of the Embassies and Legations of foreign countries. The details supplied in respect of great Powers such as Germany, France, Italy and Japan fill only a few lines. It is perhaps only to be expected that for the United States and Great Britain at least ten times as much information appears, quite apart from sections devoted to the Dominions, each of which supplies more information than that detailed for any European country.

Undoubtedly the most interesting sections of the book will be those devoted to details of modern aircraft and engines. There is no question about the information being up-to-date as regards aircraft built in this country, and very full details are given of famous aircraft, "ordered straight off the drawing board," which only a very short time ago were on the secret list—such as the Battle, Blenheim, and Wellesley; the Hurricane is mentioned but no details are given. On the civil aviation side there is a very complete description, fully illustrated, of the Mayo composite aircraft, the

De Havilland Albatross and the Short Empire flying boats. The engine section shows that in this country at least, progress with engines suited for heavy oil is slow as compared with developments in Germany and the United States.

The general trend of development, judging from an examination of these details, is towards larger aeroplanes with increased wing loading, and aircraft engines of increased horse-power. Combinations of slots and flaps are being further developed resulting in reduced landing speeds, although maximum speeds may be much increased. Amongst civil aviation aircraft, there are two or three which can land on a tennis court, fold their wings or rotors and be pushed into a garage little larger than that used for a modern motor car. One or two illustrations show these aircraft being towed through crowded streets.

The scope of the work is wider than ever, and it will be of the greatest interest not only to old stagers who have watched it grow for many years, but to that increasing number of Service readers introduced to aviation by the armament expansion.

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CRISIS IN CHINA. By J. M. Bertram. 10s. 6d. 8vo. (Macmillan & Co.).

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THE HOUSE THAT HITLER BUILT. By S. H. Roberts. 12s. 6d. 8vo. (Methuen).

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NAVAL

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MILITARY

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31st December, 1937.

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Balances in Account with Subsidiary Banks	13,530,322	
		434,645,323
Acceptances and Endorsements, &c., for account of Customers		8,532,516
Paid-up Capital		15,858,217
Reserve Fund		10,750,000

ASSETS	
Cash in hand, and with the Bank of England	54,839,825
Balances with other British Banks and Cheques in course of collection	15,943,494
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Bills Discounted	50,362,681
Investments	102,423,395
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Union Bank of Manchester Limited—300,000 Shares of £5 each, £2 10s. paid	750,000
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